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## PERSONAL.

Mr. J. J. Turner has been elected Fourth Vice-President of the Pennsylvania R. R., to succeed Mr. L. F. Loree.

Mr. H. I. Miller has been appointed General Manager of the Vandalia Line, with headquarters at St. Louis, Mo.

Mr. Douglass T. Corning has been appointed Assistant Engineer in the Water-Works Department of Troy, N. Y.

Mr. H. W. Carlton has been appointed Superintendent of the Tennessee Central R. R., with headquarters at Emery Gap, Tenn.

Mr. C. B. Vorce has been appointed Chief Engineer of the Greenwich & Johnsonville Ry., with headquarters at Greenwich, N. Y.

Mr. Lucian H. Thompson, Superintendent of the waterworks at Dunkirk, N. Y., and Mr. George M. Newton, Engineer, have resigned.

Mr. F. L. Wauklyn, Manager and Chief Engineer of the Montreal Street Ry., has been appointed Manager of the Montreal (Que.) Power Co.

Mr. E. H. Wade, Assistant Master Mechanic of the Chicago & Northwestern R. R., at Chicago, Ill., has been appointed Master Mechanic at Eagle Grove, Ia.

Mr. F. E. House has resigned as General Manager of the Bessemer & Lake Erie R. R., and is succeeded by Mr. E. H. Utley, with headquarters at Pittsburg, Pa.

Mr. Edward B. Gunn, formerly Superintendent of the Lafayette St. Ry., of Lafayette, Ind., has been appointed Superintendent of the Richmond Street & Interurban Ry., of Richmond, Ind.

Mr. George Larrabee, of Boston, Mass., has been appointed Superintendent of the Enfield & Longmeadow Electric Ry., of Thompsonville, Conn., to succeed Mr. G. L. Fairbrother, resigned.

Mr. G. R. Henderson has been appointed Assistant Superintendent of Machinery on the Atchison, Topeka & Santa Fe Ry., and has resigned his similar position with the Chicago & Northwestern Ry.

Mr. A. J. McDonald, Superintendent of the Central Division of the Montreal St. Ry. Co.'s system, has been appointed General Superintendent of the street railway system of the city of Mexico, Mex.

Mr. C. E. Fowler, M. Am. Soc. C. E., President and Chief Engineer of the Puget Sound Bridge & Dredging Co., has been elected a member of the Board of Trustees of the Chamber of Commerce of Seattle, Wash.

Mr. L. G. Hass has resigned as Superintendent of the Ashtabula Division of the Pennsylvania R. R., at New Castle, Pa., to become Assistant to the General Manager of the Baltimore & Ohio R. R., at Baltimore, Md.

Mr. William S. Turner, formerly of the firm of Woodbridge & Turner, will go to Auckland, New Zealand, to represent J. G. White & Co., of New York, and will construct a street railway in that city for the company.

Mr. J. F. Barnard has been discharged as Receiver of the St. Clair, Madison & St. Louis Belt R. R., and has been elected President, with Mr. Edwards Whittaker Vice-President and Mr. Luther A. Handy Secretary and Treasurer.

Mr. Percy S. Hildreth, of the firm of Hildreth & Co., 32 Broadway, New York, has been appointed Consulting Engineer in the matter of the construction of the extension of Riverside Drive, from 135th St. to the Boulevard Lafayette.

Mr. Charles D. Flint, of Winooski, Vt., has been appointed to succeed Mr. George D. Nash as Master Mechanic and Civil Engineer of the Burlington, Winooski and Colchester Mills, also of the Burlington Flouring Co., and the Winooski Aqueduct Co.

Mr. E. E. Porter, Electrical Engineer, connected with the Shanghai Cotton Mills, is at present in this country for the purpose of investigating into the matter of adopting modern American electrical equipment for installation in these Chinese plants.

Mr. James W. Brown has been elected President of the newly chartered Colonial Steel Co., of Pittsburg, Pa., with Mr. George A. Howe First Vice-President, Mr. T. Howe Childs Second Vice-President, and Mr. Charles M. Brown Secretary and Treasurer.

Mr. Chas. W. Leavitt, Jr., Assoc. M. Soc. C. E., Civil Engineer and Landscape Gardener, 15 Cortlandt St., New York, has been appointed Landscape Engineer of the New York Central & Hudson River R. R., and will give attention to the station grounds and improvements along the right of way. Mr. Leavitt will also continue his private practice.

Mr. Frederick J. Amweg, M. Am. Soc. C. E., Chief Engineer of the Honolulu Rapid Transit & Land Co., has resigned, and has accepted the position of Manager of the Hawaiian Engineering & Construction Co., lately incorporated, with office in the Stangenwald Building, Honolulu.

Mr. J. S. Chambers has been appointed Superintendent of Motive Power of the Atlantic Coast Line Ry., with headquarters at Wilmington, N. C., succeeding Mr. T. H. Symington, resigned. Mr. Chambers was formerly Master Mechanic of the Central R. R. of New Jersey at Elizabethport, N. J.

Mr. Y. Tsumagi, Civil Engineer, and Architect of the Home Department of the Japanese Government, has arrived in this country to study modern building. Mr. Tsumagi will be a guest of the Japanese Consulate in New York city for the next four weeks, and will then go to Washington for a month, to study public buildings.

Mr. A. H. Hayward, who has been acting as Consulting Engineer of the Buenos Aires & Belgrano Ry. Co. for Messrs. Kincaid, Waller and Manville, of London, is now in New York city. Mr. Hayward will go to San Juan, Porto Rico, to manage the local lighting and tramway company, in the interest of J. G. White & Co., of New York.

Mr. W. B. Upton has resigned the office of Vice-President, Chief Engineer and Superintendent, and as a Director of the Brennan Construction Co., and has opened offices in the Washington Loan & Trust Building, Washington, D. C., under the firm name of W. B. Upton & Co., to engage in a general engineering and contracting business.

Mr. J. W. Kendrick, M. Am. Soc. C. E., Second Vice-President of the Northern Pacific Ry., has been appointed Third Vice-President of the Atchison, Topeka & Santa Fe Ry., in charge of the operating department. His office will be in Chicago. He has been with the Northern Pacific Ry. continuously since he entered the engineer corps in 1879, being Chief Engineer from 1888 to 1893, and then General Manager until 1899, when he became Second Vice-President.

## OBITUARY.

Mr. Edgar Munson, who was the first President of the Syracuse, Geneva & Corning R. R., died at his home in Williamsport, Pa., on May 26, aged 81 years.

Mr. Arthur S. Watt, Mining Engineer and Chemist, died at his home in Brooklyn, N. Y., on June 11, aged 38 years. Mr. Watt received his education at the Polytechnic Institute in Brooklyn and at Lafayette College.

Sir Courtenay Boyle, Permanent Secretary to the British Board of Trade, died recently at his residence in Granville Place, Portman Square, London, from heart failure. Sir Courtenay Boyle was born at Jamaica, in 1845, and was appointed Permanent Secretary to the Board of Trade in 1894. Sir Courtenay was an able advisor in matters relating to fishing, harbors, shipping, railways, electricity, labor disputes, etc., and had a thorough grasp of the application of electricity to lighting and motive power of every kind.

## ENGINEERING SOCIETIES.

### COMING MEETINGS.

AMERICAN WATER-WORKS ASSOCIATION.
June 17 to 21. Annual convention in New York city. Secy., Peter Milne, Bennett Bldg., New York city.
CANADIAN ELECTRICAL ASSOCIATION.
June 19 to 21. Annual meeting at Ottawa, Ont. Secy., C. H. Mortimer, Confederation Life Bldg., Toronto, Can.
ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.
June 19. Annual meeting at Boston, Mass. Secy., P. W. Drew, Wis. Cent. Ry., Milwaukee, Wis.
AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.
June 19. Annual convention at Saratoga, N. Y. Secy., Jos. W. Taylor, 667 Rookery Bldg., Chicago, Ill.
INTERNATIONAL ACETYLENE ASSOCIATION.
June 20 to 22. Annual meeting at Buffalo, N. Y. Secy., J. B. Carroll, 84 Market St., Chicago, Ill.
MASTER CAR BUILDERS' ASSOCIATION.
June 24. Annual convention at Saratoga, N. Y. Secy., Jos. W. Taylor, 667 Rookery Bldg., Chicago, Ill.
SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.
June 29 to July 2. Annual meeting at Buffalo, N. Y. Secy., Henry S. Jacoby, Cornell University, Ithaca, N. Y.
AMERICAN SOCIETY OF CIVIL ENGINEERS.
June 25 to 28. Annual meeting at Niagara Falls. Secy., C. W. Hunt, 12 W. 57th St., New York city.
RAILWAY TRANSPORTATION ASSOCIATION.
July 17. Annual meeting at Niagara Falls, N. Y. Secy., G. P. Conard, 24 Park Place, New York city.

WESTERN SOCIETY OF ENGINEERS.—At the meeting on June 5, discussions on Mr. Geo. S. Morison's paper on "The Effects of Splicing and Riveting" were presented; some remarks were made by Mr. R. Modjeski, and the secretary read communications from Mr. J. A. L. Waddell and Prof. A. N. Talbot. The discussion of Mr. J. H. Spengler's paper on "The Water-Works System of Chicago" was then taken up, and Mr. John Ericson, the City Engineer, presented a very interesting supplementary paper on the present and future needs of the city as regards its water supply.

AMERICAN WATER-WORKS ASSOCIATION.—At the annual convention, to be held in New York, on June 17 to 27, the following papers will be read: "The Purification of Water," by P. A. Maignan, Philadelphia, Pa.; "Storage Water Supplies," by L. J. Le Conte, Oakland, Cal.; "A Theory Accounting for the Bursting of Water Mains not Ascribed to Known Causes," by L. N. Case, Duluth, Minn.; Water Distribution," by Charles A. Hague, New York city; "Water Ram Utilized," by George T. Latta, Ludlow, Ky.; "Filtration," by John M. Diven, Elmira, N. Y.; "Mattoids in Engineering," by H. F. J. Porter, New York city; "A Brief Description of the St. Louis Water-Works Distribution System," by Benj. C. Alkins, St. Louis, Mo.; "Water Supply of Gibraltar," by Prof. W. P. Mason, Troy, N. Y.; "Observation of Albany Filter Plant," by Geo. L. Bailey, Albany, N. Y.; "Purification of Chemung River, at Elmira, N. Y.," by James M. Caird, Troy, N. Y.; "An Attempt to Prove that Thrift in the Operation of Water-Works is More Economical than Waste," by Clemens Herschel, New York city; "Restrictive Features of Guarding Against Waste of Water," by S. J. Rosamond, Fort Smith, Ark.; "Some Observations of the Household Consumption of Water," by Henry C. Hodgkins, Syracuse, N. Y.; "Electrically Driven Centrifugal Deep-Well Pumps Used at the Water-Works of Moscow, Russia," and "Water Purification by Means of Ozonized Air," by Nicholas Simin, Moscow, Russia.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.—At the annual meeting to be held at Buffalo, N. Y., on June 29 to July 2, the following papers will be presented: "The Cultural Value of Engineering Education," by Frank O. Marvin; "A Study of the Principles of Administration in Engineering Schools," by Olin H. Landreth; "Photography in Engineering Courses," by Joseph N. Bradford; "The Arrangement of Undergraduate Courses in Electrical Engineering," by John P. Jackson; "A Neglected Opportunity in Technical Education," by Chas. F. Burgess; "On Houston Hall, University of Pennsylvania; Its Plan, Uses, Government, Expenses, etc," by Henry W. Spangler; "To What Extent Should Modern Languages be Required in Engineering Courses?" by Charles L. Crandall; "How the Graduation Thesis Can be Made Most Effective in College Training," by William M. Towle; "The Availability of Correspondence Schools as Trade Schools," by Dugald C. Jackson; "The Danger of Excessive Specialization in Undergraduate Engineering Courses," by James C. Nagle; "Graduation Requirements for the Bachelor's Degree in Engineering," by William C. Raymond, Robert Fletcher and Lingan S. Randolph; "Present Tendencies in Technical and Industrial Education," by John B. Johnson; "Aesthetics in Engineering Design," by Russell Sturgis; "To What Extent and in What Direction is it Desirable for a Professor of Engineering to Accept Engineering Employment," by C. Frank Allen; "To What Extent Should Engineering Teachers Engage in Outside Work," by William Kent; "Research and Publication Among Engineering Teachers," by William S. Aldrich; "Report of the Committee on Entrance Requirements for Engineering Colleges," by H. W. Tyler, Chairman; "A Laboratory Exercise; the Calibration of a Riehlé-Gray Apparatus," by George R. Chatburn; "Irrigation in Engineering Courses of Instruction," by Elwood Mead; "On Teaching Machine Design," by Forrest R. Jones; "Machine Work in an Engineering College," by William P. Turner; "The Summer School for Apprentices and Artisans at the University of Wisconsin," by John G. D. Mack.

## CONSTRUCTION NEWS.

CONDENSED LIST OF CONTRACTS PENDING WITH DATE OF OPENING BIDS.

| Bids to be opened | Work. | Place. | See Eng. News. |
|---|---|---|---|
| June 15. | Water-works, | St. Charles, Ill. | June 6 |
| | Advertised, Engineering News, June 6. | | |
| June 15. | Sewers, | Washington, D.C. | June 6 |
| | Advertised, Engineering News, June 6. | | |
| June 15. | Railway, | Sault Ste. Marie, Ont. | June 6 |
| June 15. | Brick sewer, | Chicopee, Mass. | June 13 |
| June 15. | College building, | Kingston, Ont. | June 13 |
| June 15. | Paving, | Elizabeth, N. J. | June 13 |
| June 17. | Water-works improvements, | Joliet, Ill. | Apr. 28 |
| | Advertised, Apr. 25, May 2, 16, 30, June 13. | | |
| June 17. | School house, | Fredonia, N. Y. | May 16 |
| | Advertised, Eng. News, May 16 to 30. | | |
| June 17. | Sewerage system, | Monroe, La. | May 30 |
| | Advertised, Eng. News, May 30 and June 6. | | |
| June 17. | Water pipe, etc., | Sault Ste. Marie, Mich. | June 6 |
| | Advertised, Eng. News, June 6 and 13. | | |
| June 17. | School, | Massillon, O. | June 6 |
| June 17. | Brick and pipe sewers, | Sault Ste. Marie. | June 6 |
| | Advertised, Eng. News, June 6 and 13. | | |
| June 17. | Fireproofing, | Cleveland, O. | June 6 |
| June 17. | Street improvements, | Muncie, Ind. | June 6 |
| June 17. | Suction frame, | St. Louis, Mo. | June 13 |
| June 17. | Light houses, | St. Joseph Point, Fla. | June 13 |
| June 17. | Bridge draw, | Lakewood, N. J. | June 13 |
| June 17. | Paving, | Glens Falls, N. Y. | June 13 |
| | Advertised, Eng. News, June 13 to 27. | | |
| June 17. | Paving, | Johnstown, Pa. | June 13 |
| June 18. | Officers' quarters, | Washington, D.C. | June 13 |
| June 18. | Paving, | St. Louis, Mo. | June 13 |
| June 18. | Paving, | Jersey City, N. J. | June 13 |
| June 18. | Water pipe, etc., | Boston, Mass. | June 13 |
| June 18. | Water franchise, | Linton, Ind. | June 13 |
| | Advertised, Engineering News, June 13. | | |
| June 18. | Electric plant, | New Orleans, La. | June 6 |
| June 18. | Water-works, | Jasper, Minn. | May 30 |
| June 18. | Jetty, | Galveston, Tex. | May 23 |
| | Advertised, Eng. News, May 23 to June 13. | | |
| June 18. | Pumping engines (6), | Cincinnati, O. | Mar. 21 |
| | Advertised, Mar. 21, Apr. 4, 18, May 2, 16, 30. | | |
| June 18. | Boiler plant (building), | Xenia, O. | May 23 |
| June 18. | Road improvements, | Bowling Green, O. | May 30 |
| June 18. | Road improvements, | Belair, Md. | June 6 |
| June 18. | College building, | Bloomington, Ind. | June 6 |
| June 18. | Street Bonds, | Toledo, O. | June 6 |
| June 18. | Water pipe, | Boston, Mass. | June 13 |
| | Advertised, Engineering News, June 13. | | |
| June 19. | Electric plant, | Fort Greble, R. I. | May 23 |
| | Advertised, Eng. News, May 23 to June 6. | | |
| June 19. | Wiring building, | Philadelphia, Pa. | May 30 |
| June 19. | Water-works, | Napoleonville, La. | June 6 |
| | Advertised, Engineering News, June 6. | | |
| June 19. | Paving, | Terre Haute, Ind. | June 6 |
| June 19. | Bridge superstructure, | Ottawa, Ont. | June 6 |
| June 19. | Brick sewer, | Bridgeport, Conn. | June 13 |
| | Advertised, Engineering News, June 13. | | |
| June 20. | Levee, | Greenville, Miss. | June 13 |
| June 20. | School, | Waltham, Mass. | June 13 |
| June 20. | Officers' quarters, etc., | Annapolis, Md. | June 13 |
| June 20. | Church, | Antigo, Wis. | June 13 |
| June 20. | Road bonds, | Gallipolis, O. | June 13 |
| June 20. | Paving, | Houston, Tex. | June 13 |
| June 20. | Water pipe, castings, etc., | Newark, N.J. | June 13 |
| | Advertised, Engineering News, June 13. | | |
| June 20. | Water-works, | Copenhagen, N. Y. | June 6 |

June 20. Engine and dynamo, Kansas City, Mo.....June 6
June 20. Cement, etc., Fort Hamilton, N. Y. H.....June 6
Advertised, Eng. News, June 6 and 13.
June 20. Bridge piers (6), New York, N. Y.....June 6
Advertised, Eng. News, June 6 and 13.
June 20. Electric wiring system, Monmouth, Ill....May 30
June 20. Electric lighting, Mount Vernon, O.....May 31
June 20. Paving, Lima, O.....May 30
June 20. Water pipe, hydrants, etc., Tucson, Ariz..May 30
Advertised, Eng. News, May 30 and June 6.
June 20. Water-works, sewers, etc., Sussex, N.B...May 30
June 21. Screenings, etc., Paterson, N. J.....June 6
June 21. Electric plant bonds, Winnemucca, Nev...June 6
June 22. Brick, Savannah, Ga. .....June 6
June 22. Sewers, Washington, D. C.....May 30
Advertised, Eng. News, May 30.
June 22. Water-works, New Matamoras, O.....May 30
June 22. Steel roof, crane, etc., Boston, Mass.....May 30
June 22. Dredging, Washington, D. C.....May 30
June 22. Dredging, Portsmouth, N. H.....June 13
June 22. Boilers, etc., New York, N. Y.....June 13
June 22. Iron bridge, Akron, O.....June 13
June 22. Steel roof, Washington, D.C.....June 13
June 22. Boilers, etc., Washington, D. C.....June 13
June 22. College building, Durant, Ind. Ter.....June 13
June 22. Macadam, Marion, O. .....June 13
June 24. Sea wall, New York, N. Y.....May 23
Advertised, Eng. News, May 23 to June 13.
June 24. Dredging, Pearl Harbor, H. I. .....May 2
June 24. Water bonds, Philadelphia, Pa.....June 6
June 24. Court house, Martinez, Cal.....June 6
June 24. Hotel building, Redding, Cal.....June 6
June 24. Electrical apparatus, Victoria, B.C.....June 6
June 24. Electric plant, Butler, O.....June 6
June 24. Sewers, etc., Fond du Lac, Wis.....June 6
Advertised, Engineering News, June 6.
June 24. Refrigerating apparatus, Middletown, N.Y. June 13
June 24. School, Lincoln, Colo.....June 13
June 24. Steel bridges (3), Monticello, Mo.....June 13
June 24. Steel bridge, Rutland, Vt.....June 13
Advertised, Engineering News, June 13.
June 24. Macadam, East Chicago, Ind. .....June 13
June 24. Paving, Toledo, O. .....June 13
June 25. Pumping plant, St. Louis, Mich.....June 13
Advertised, Eng. News, June 13 and 20.
June 25. Sewage disposal plant, Kingston, N.Y....June 13
Advertised, Eng. News, June 13 and 20.
June 25. Pumping plant, Hull, Que. .....June 13
Advertised, Eng. News, June 13 and 20.
June 25. Electric plant, Independence, Mo.....June 13
Advertised, Eng. News, June 13 and 20.
June 25. Elevator (bldgs.), Harrisburg, Pa.....June 13
June 25. School, Sandstone, Minn.....June 13
June 25. Constructing road, Bowling Green, O. ....June 6
June 25. Asphalt, Vernal, Utah. .....June 13
June 25. Post-office, etc., Abilene, Tex.....June 6
June 25. Electric plant, Ellisville, Miss.....June 6
Advertised, Engineering News, June 6.
June 25. Brick sewer, Cleveland, O.... .....June 6
Advertised, Eng. News, June 6 and 13.
June 25. Wiring building, etc., Birmingham, Ala...June 6
June 25. Paving, Peru, Ind. .....June 6
June 25. Sewage pump'g machinery, Pittsfield, Mass. May 30
Advertised, Eng. News, May 30 and June 13.
June 26. Electric plant, etc., Winchester, Tenn....June 13
June 27. Garbage disposal, etc., New York, N.Y...June 13
June 27. Electric plant, Butler, Mo.....June 13
Advertised, Eng. News, June 13 and 20.
June 27. Dredging, Bay Natchez, La.....May 30
Advertised, Eng. News, May 30 and June 20.
June 27. Reservoir, pipe laying, etc., Geneva, O...June 6
June 27. Meters, hydrants, etc., Geneva, O.....June 6
June 28. Sewerage system, Sidney, O.....June 6
Advertised, Engineering News, June 6.
June 28. Road bonds, Greenville, N. C.....May 30
June 28. Pumping engines, Minneapolis, Minn.....May 16
June 28. Water-pipe, etc., Westfield, N. Y.....June 13
June 29. Sewage disposal plant, South Brooklyn, O..June 13
June 29. Macadam, Washington, N. J.....June 13
June 29. Paving, Manistee, Mich. .....June 13
Advertised, Engineering News, June 13.
June 29. Building, Bremerton, Wash.....May 30
June 29. Bolts, castings, etc., Charleston, S. C....May 30
Advertised, Eng. News, May 30 and June 20.
June 29. Paving, Lorain, O.....June 6
June 29. Sewers, Findlay, O. .....June 6
June 29. College building, Lafayette, Ind. .....June 6
June 30. Pipe sewers, Tampa, Fla.....Apr. 25
No date. Railroad work, Ste. Genevieve, Mo.....May 23
" . Water main, etc., Mineral Point, Wis....June 6
Advertised, Eng. News, June 6 and 13.
" . Power plant, etc., Buchanan, Mich.....June 13
Advertised, Engineering News, June 13.
" . Electric railway, St. Louis, Mo.....June 13
" . Shaft sinking, St. Louis, Mo.....June 13

## RAILWAYS.

ALABAMA, MISSISSIPPI VALLEY & GULF.—H. P. Farrar, Ch. Engr., Jackson, Tenn., informs us that nothing can be done in the line of awarding contracts until after the meeting of the board of directors in the latter part of June or early July. The line has been surveyed between Friar's Point and Water Valley, and the rights of way are secured, running from Friar's Point, Clarksdale, Belen, Riverside, Water Valley and Tupelo, about 74 miles. G. D. Jennings, Pres., Water Valley, Miss.

BURLINGTON, CEDAR RAPIDS & NORTHERN.—H. F. White, Cedar Rapids, Ia., writes us that the grading and bridging on the extension from Albert Lea to Faribault, Minn., is practically completed, and the track laying is now in progress.

CAPE BRETON RY. EXTENSION.—It is reported that work on this project will begin immediately. It is proposed to build a road from Yarmouth, N. S., northeasterly to Halffax, and from Port Hawkesbury, on the Straits of Canso, to Louisburg and Sydney. The road will run through the southern part of the island, south of the Bras d'Or Lakes, to Louisburg, and thence to Sydney, where the Dominion Coal, Iron & Steel Co.'s plants are located. There will be 235 miles of line to build, and about 40 miles to acquire. Two years will be required to complete the work. Dr. W. Seward Webb, Wm. C. Whitney, S. R. Callaway and Edgar Van Elten, all of New York, are reported to be interested in the new enterprise.

CENTRAL R. R. OF ALABAMA.—A charter has been issued this company in Alabama for the purpose of building a railway between Tuscaloosa and Decatur, Ala., passing through Tuscaloosa, Walker, Cullman and Morgan counties. The capital stock is $500,000. John Carlisle, Cincinnati, O.; J. T. Hill, Chattanooga, Tenn., and T. L. Baker, New Decatur, are interested.

CHICAGO, DUBUQUE & PACIFIC.—G. R. Struble, Pres., Toledo, Ia., informs us that the proposed route of this line has been changed and has not yet been finally located. As now proposed, the road will run through Dubuque, Monticello, Vinton, Toledo and Des Moines, a total distance of 200 miles. It will be standard gage.

COPPER BELT.—Incorporated in Utah with a capital stock of $100,000. The company intends to lease three miles of partly-constructed track from the Rio Grande Western R. R., and equip and operate the same from the Rio Grande Western Depot at Bingham up Bingham Canyon to the Bingham Copper & Gold Mining Co.'s works. Wm. Bayley, Pres.; J. G. Jacobs, Vice-Pres., and H. G. Heffron, Secy., of Salt Lake City.

CRANBERRY R. R.—The owners of this road are reported to have instructed J. E. Lawton, Supt., Johnson City, Tenn., to commence at once the reconstruction of their line. It has been estimated that the work will cost in the neighborhood of $1,000,000.

DOTHAN & ST. JOSEPH.—J. P. Pelham, Dothan, Ala., has returned from Philadelphia, where he has been securing the necessary capital for the construction of this road, and it is now stated that work will be started at once. The road will run through Henry county, Ala., thence through Chipley, Fla., and will be 80 miles long.

ENTERPIRSE SOUTHERN.—Incorporated in Alabama with a capital stock of $200,000, to build a road from Enterprise to Geneva. T. D. L. Edwards, W. A. McGilvray and J. A. Rast, of Enterprise, Ala., are incorporators. T. D. L. Edwards, Secy., informs us that a preliminary survey has been completed and profiles are made. It is hoped to be able to contract for construction in about 90 days. The road will run through a fine agricultural and timber section in Southeast Alabama and Southwest Florida for a distance of 125 miles, connecting the Central of Georgia, the Louisville & Nashville and the Plant systems. The southern terminus will be on the Gulf of Mexico. Ed. M. Johnson, Pres., Enterprise. Chief Engineer Burtcheall is from Union Springs.

FT. WORTH, CORSICANA & SABINE PASS.—F. C. Hand, Ch. Engr., Corsicana, Tex., informs us that the surveys have been made and some hights of way are secured for this road, but at present nothing definite is being done. The line will be 320 miles long. C. H. Allyn, Pres., Corsicana.

GEORGIA, FLORIDA & ALABAMA.—The stockholders have authorized the issuance of $550,000 in bonds to provide for the extension of the line to Tallahassee, Fla., a distance of 41 miles. J. P. Williams, Pres., Savannah, Ga.

GULF, RICE BELT & NORTHERN.—Articles of incorporation will soon be filed by the promoters of this line, which will give connection by rail between Crowley, La., and Dallas, Tex. The first section to be built will be from Crowley to the vicinity of Leesville, 135 miles. J. C. Braden, of Chicago, is one of the promoters.

INDIANA, ILLINOIS & IOWA.—The management of this road is reported to have decided to build a Chicago connection from South Bend, Ind., to Toledo or Detroit, or possibly both. The survey for the line between South Bend and Toledo is 60 miles in both cases. These additional lines will give the company 500 miles of road. T. P. Shonts, Pres., Chicago.

KANSAS & SOUTHERN.—H. A. Schwanecke, Ch. Engr., Marshall, Ill., writes us that contracts for construction have not yet been let, but will be awarded soon. Some of the rights of way are secured. The line will be 140 miles long, and will run through Westmoreland, Myers Valley, Wamego and Alma. Chas. S. Wheeler, Pres., Kansas City, Mo.

KANSAS, EASTERN OKLAHOMA & TEXAS.—Fred. L. Pitman, Gen. Mgr. and Ch. Engr., Cherryvale, Kan., writes us that engineers are now in the field beginning the survey of this line, 500 miles, and negotiations are being made for the construction capital. The town of Cherryvale has voted $20,000 towards the construction. The road will run from Cherryvale and Independence, Kan.; Cleveland, Chandler and Shawnee, Okla., and Henrietta, Tex. J. H. Brewster, Pres., Cherryvale.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—The contract for grading the new extension from Wishek, N. Dak., to the Missouri River has been awarded to Halvorson & Richards, of Minneapolis, Minn., and work has commenced on the old Aberdeen grade between Wishek and Ashley, a distance of 20 miles. As soon as this is completed work will be started on the line from Ashley to the Missouri River, about 50 miles. Engineers are now in the field. The exact terminus on the Missouri River is not yet determined, but will probably be at Winona, N. Dak., for the present. The entire 70 miles will be ironed and ready for operation by Oct. 1.

MUSQUODOBOIT RY.—This company has sold $100,000 worth of stock, and it is expected that the road will be ready for operation early in 1902. The road will run through one of the richest agricultural districts of Nova Scotia, and will traverse the Musquodoboit Valley for a distance of 30 miles. J. W. Greer, Pres., Montreal, Que.; M. H. Fitzgerald, M. P., Vice-Pres., New Glasgow, N. S.

NORTH & SOUTH.—The contract for building this road is reported to have been let to Robt. Elzy, Marshalltown, Ia. The preliminary survey for beginning construction is progressing and grading will be started in a short time. The road is to be completed within a year.

NORTHERN MICHIGAN.—The promoters of the plan to build an air-line railway from St. Ignace to Sault Ste. Marie, Mich., expect to have a connection between those points within a year's time. The new road will probably be known by this name, and will be 60 miles in length. A preliminary survey has been made and a right of way secured from St. Ignace to Pickford, 24 miles from the Soo. No difficulty is anticipated in securing the remaining rights. Frank Hamlin, Pres.; B. Boyden, Vice-Pres.; S. E. Peel, Secy., of Sault Ste. Marie, Mich.

NORTHERN PACIFIC.—A contract has been let for track improvements and betterments on the western end of the line between Ellensberg and Spokane, Wash., to Nelson Rich, of North Yakima, Wash. Several miles of new track will be added. This is the first of a series of contracts to be let for inprovements, to be completed this year at a cost of about $500,000.

PENNSYLVANIA R. R.—The company is reported to have planned the double tracking of the Fort Wayne road between Bucyrus and Upper Sandusky, O., on the main line. The cost will probably be $400,000. It is reported that bids were to have been received on June 10 for doing this work. About 1,500,000 cu. yds. of earth excavation will be required. The contracts will probably be divided in sections, and work will be pushed so as to complete it by fall. W. H. Brown, Ch. Engr., Philadelphia, Pa.

PLANT SYSTEM.—The contract for the cut-off between Jesup and Folkston, Ga., has been let to L. R. Wright & Co., of Jesup, Ga., and work has been started. The contract calls for the completion of the line by Dec. 1.

PORTLAND, NEHALEM & TILLAMOOK.—John McCraker, Pres., Portland, Ore., advises us that surveys and estimates are made and the rights of way secured for a considerable part of this road. The construction capital is not yet secured. No contracts have been awarded. This line will be about 114 miles in length, and will run through the points named. Wm. Reid, Ch. Engr., Worcester Bldg., Portland.

SALMON RIVER R. R.—Wm. Ashton, Res. Engr., Salt Lake City, Utah., writes us that the contract for grading and bridging this line, a branch of the Oregon Short Line, has been let to the Utah Construction Co., of Ogden, Utah. Grading is about one-third completed. The line will be 90 miles in length, extending from Blackfoot, Idaho, northeasterly to a point near Houston. W. H. Bancroft, Pres., Salt Lake City.

SIOUX CITY & PACIFIC.—Bids will be received by the Solicitor of the Treasury, Washington, D. C., until June 20 for the purchase of this road. Bids lower than $1,872,000, the price set by Secretary Gage, will not be considered.

SPRINGFIELD & DECATUR.—Arrangements for the building of this road have been completed and track laying will probably be started by July 1. The line goes west to Springfield, and will probably be extended to Kansas City. The Illinois Central track will be used for a part of the distance. It is said that the Cincinnati, Hamilton & Dayton R. R. is in back of the scheme. Frank C. Roby, Pres.; L. L. Burrows, Vice-Pres., and John Prestley, Secy., Decatur, Ill.

SOUTHERN PACIFIC.—The contract for grading the road from Abbeville, La., to Gueydan has been let to S. A. Robertson & Co. They will begin work at once, and expect to have the road graded within two months.

TOLEDO, ELKHART & CHICAGO.—Organized in Indiana with a capital stock of $100,000, to build between these points, with a branch line from Nappanee, Ind., to Berrien Springs, Niles and thence to Benton Harbor, Mich. M. V. Demerest, Elkhart; O. A. Baker, Marion, Ind., and O. G. Wiles, Dowagiac, Mich., are interested.

TOLUCA, MARQUETTA & NORTHERN.—Chas. S. Henning, Ch. Engr., Toluca, Ill., informs us that grading and track laying on this line is now under way. The line will be 40 miles in length.

WAYCROSS AIR LINE.—The directors at a recent meeting authorized and made final arrangements for the building of this road to Cordele, Ga., from Fitzgerald, about 25 miles. Surveys were completed some time ago and work will begin at once, according to reports, and will be completed by the end of the year. Geo. G. Wadley, Vice-Pres. and Gen. Mgr., Waycross, Ga.

## STREET AND ELECTRIC RAILWAYS.

ALBANY, N. Y.—The Mohawk River Traction Co. has been incorporated with a capital stock of $100,000, to operate a street surface railway through Nelliston, Fort Plain, Canajoharie and Sharon Springs. F. E. Simons and Howard Vosburg, of Canajoharie, and Chas. F. Stowell, Albany, are interested.

AMSTERDAM, N. Y.—The directors of the Fonda, Johnstown & Gloversville R. R. have voted to extend their electric line from Johnstown to Amsterdam. The surveys will be started at once. The road will be operated by electricity. J. L. Hees, Pres. and Gen. Mgr., Gloversville.——The directors of the Amsterdam St. Ry. Co. have also voted to extend their lines from this city to Schenectady, connecting with the Schenectady electric road. A survey will be made at once. J. L. Hees, Pres.

CANANDAIGUA, N. Y.—O. N. Crane, of this place, writes us that the Rochester & Eastern Rapid R. R. has been incorporated, but not yet organized. Franchises have been secured over the entire route, 45 miles, and rights of way are secured. The railroad commissioners are expected to take early action on the matter of granting a charter. Electricity will be used as a motive power.——Application will be made by Walter H. Knapp at the next meeting of the village board for a franchise for the Ontario & Wayne Traction Co. to operate a road in this village.

PENN YAN, N. Y.—A company has been organized to construct an electric railway from Dundee to Bradford, a distance of 16 miles. As soon as the right of way is entirely secured work will be started on the surveys. Geo. P. Lord, Pres., Dundee; Hiram Munson, Vice-Pres.

SYRACUSE, N. Y.—Geo. E. Higgins, Ch. Engr. Canastota & Morrisville R. R., Syracuse, informs us that the company expects to be ready to receive bids for the construction of its line in three or four weeks. The surveys are now under way and the rights of way are secured. The line will be an electric, 15½ miles in length, running from Canastota to Morrisville, by way of Clockville and Peterboro. W. N. Patten, Pres., Canastota.

UTICA, N. Y.—Chas. H. Clark, Ch. Engr. Utica & Mohawk R. R., writes that the surveys have been completed for the 7-mile extension from Bleecker St., Utica, to Frankfort, and rights of way are obtained. The company is doing its own work on the extension.——The Utica & Suburban R. R. will extend to Rome, seven miles, over private rights of way. Surveys are completed, and all rights of way purchased. Work will begin at once. All material ordered. T. L. Proctor, Pres.; John J. Stanley, Gen. Mgr.; Chas. H. Clark, Ch. Engr.——At a recent meeting of the council the Utica Belt Line St. R. R. was granted a franchise to construct the necessary curves of track at the corner of Genesee and Bleecker Sts., Genesee and La Fayette Sts., and Genesee and Columbia Sts., which will cost about $15,000.

YATES, N. Y.—The promoters of the proposed Lamoka Valley electric railway recently held a meeting at Keuka and voted that R. L. Lyon, of Bath, be directed to draw up the necessary papers of incorporation of the road, to be known as the Dundee, Tyrone & Bradford R. R. The route was decided on as follows: from Dundee to Bradford, via Crystal Springs, Weston and Tyrone, following the highway. A spur from Wayne to Keuka will probably be included. No difficulty is expected in securing the rights of way, and it is proposed to have the line completed this year. Cyrus Munson, Bradford; N. F. Murdock, Dundee, and Emerson Bissell, Tyrone, are interested.

SHARON, PA.—The Youngstown & Sharon St. Ry. Co. has awarded the contract for all the steel rails to be used in the construction of the line between this city and Newcastle, a distance of 21 miles. It is the intention to expend about $2,500,000 in Western Pennsylvania and Ohio on the new system. The road, when completed, will connect Sharon and Cleveland, taking in intermediate points.

MONTGOMERY, ALA.—The Montgomery Northern Ry. has filed articles of incorporation to build an electric standard-gage railway to run from Montgomery to Anniston, touching at Wetumpka and Rockford, Coosa county. The company is capitalized at $100,000. Application has also been made for the right to build a toll bridge across the Tallapoosa River, near Wetumpka. A. K. McLeod, Alexander City; James A. Kelly, Wetumpka, and J. W. Marley, of Montgomery county, are interested.

THIBODAUX, LA.—L. H. Lancaster, Ch. Engr., Thibodaux, informs us that the rights of way for the proposed 70-mile electric road from Houma through Lockport, Thibodaux, Napoleonville and Donaldsonville have been assured, but surveys have not yet been started. Negotiations for the construction capital will not be started until plans are definitely decided on.

OWENSBORO, KY.—The Owensboro St. Ry. Co. is reported to have been organized with a capital stock of $50,000, for the purpose of building a line in this city. W. E. Whitely, Pres., Owensboro City Ry., is interested.

CLEVELAND, O.—The Salem, Lisbon & East Liverpool Ry. Co. has been incorporated with a capital stock of $10,000, to build an electric line from Salem to East Liverpool. H. Whitford, Fred. W. Holt and Chas. H. Taylor are interested.

DAYTON, O.—J. O. Arnold, Pres. Dayton & Germantown Traction Co., 629 Superior Ave., informs us that estimates for the awarding of contracts for the company's 22 miles of road will be ready in about 10 days. The road will be operated by electricity. It will run from Dayton, through Germantown to Middletown, passing through intermediate towns. H. P. Barr, Ch. Engr., Algonquin, Dayton.

WAUSEON, O.—Fred. J. Bollinger, Wauseon, informs us that the contracts for the Toledo-Bryan Air Line will be let in a few weeks. The line will be 57 miles long, and will run through Holland, Swarton, Delta, Wauseon, Archbold, Stryker and Bryan. Surveys have been made and rights of way are obtained. Milton Taylor, Pres., Toledo.

TOLEDO, O.—Frank T. Oakley, Ch. Engr., Toledo, informs us that the contracts for the Toledo & Western Ry. have been let to G. W. Tonson, contractor, and that another award for 10 miles of track will probably be made. The surveys have been made throughout and the rights of way obtained. Eight miles of track to Sylvana is now in operation. The road will be 65 miles in length, extending from Toledo to Adrian and from Toledo to Fayette. Luther Allen, Pres., Cleveland.

GRAND RAPIDS, MICH.—W. H. Patterson, Gen. Mgr., Grand Rapids, Allegan & Kalamazoo Traction Co., has announced that work will begin at once on the company's road. Contracts have been placed for the rails, cars and electric equipment. The rails will be 70 lbs. to the yard, and the equipment will be designed and furnished by the General Electric Co. Three bridges will be necessary at Allegan. It is expected to have the road ready for operation by next season.

AURORA, ILL.—The Aurora, Elgin & Chicago R. R. Co. has let the contract for the track laying and ballasting of their road from this city to Chicago, to Bracy, Howard, Foster & Co., of Chicago. The work will commence each way from Eola, where the materials will be unloaded.

MARION, ILL.—E. S. Galusha, Res. Engr. Coal Belt Electric Ry., informs us that the contract for grading the company's 7-mile line has been let to P. M. Johnston, of St. Elmo, Ill., and 1½ miles of roadbed has already been completed. The electrical work is being done by the company. The line will run from this place to Spillerton and from Marion to White Row and Goodall, Minn. F. P. Read, Pres. and Ch. Engr., 215 Dearborn St., Chicago, Ill.

SPRINGFIELD, ILL.—The Elgin, Aurora & Southern Traction Co. has been incorporated with a capital stock of $2,000,000, to finance the recent deal whereby a Cleveland syndicate secured control of the electric lines along the Fox River. The companies thus consolidated are: The Elgin, Carpentersville & Aurora Ry., the Aurora & Geneva Ry., the Aurora St. Ry., and the Aurora, Yorkville & Morris Ry. The syndicate is represented by the Cleveland banking concern of M. J. Mandelbaum & Co., of which L. J. Wolf, the president of the new company, is a member.

MILWAUKEE, WIS.—The Sauk County Traction & Power Co. has been incorporated with a capital stock of $10,000, to build an electric railway between Portage and Baraboo, with power to build and maintain telephone and telegraph lines and to deal in electric light, heat and power. Tallmadge Hamilton, Harrison S. Green and Thomas P. Carter are interested.

ST. LOUIS, MO.—Bids are wanted by the Mississippi Valley Traction Co. for track laying and surfacing 10 miles of road from Collinsville to Edwardsville, Ill.; also for constructing 10 miles of electrical overhead work, including the setting of poles. Address the company at 418 Roe Bldg., this city.

TEXARKANA, TEX.—A company has been formed to build an electric line of street railway over the principal streets of this city and connecting with the suburbs.

SEATTLE, WASH.—The board of supervisors are considering the petition of G. T. Dunlap for a franchise on 90 miles of county roads for electric lines. Mr. Dunlap is supposed to represent parties having control of the water of Coyete Creek, where a dam is to be built.

TACOMA, WASH.—Local papers state that contracts for building the proposed line of the Tacoma & Seattle Electric R. R. will be let by June 15. About eight miles of the road has already been constructed, and work will be started on the Tacoma end as soon as the rights of way are obtained through the Puyallup Indian reservation, which will be about July 1. The company will use a 60-lb. rail. The road will be 31 miles in length. Geo. B. Blanchard, Gen. Mgr., Tacoma.

## ELECTRIC LIGHT AND POWER.

FORT WILLIAMS, ME.—Bids are asked until July 5 for furnishing the materials and for erecting an electric generating plant, as stated in our advertising columns. Maj. S. W. Roessler, U. S. Engr., Portland, Me.

OAKLAND, ME.—Eaton & Wyman, of Waterville, Me., are reported to have purchased water rights near here for Boston parties, on which it is proposed to build a power plant of 1,500 HP. capacity.

RUTLAND, VT.—Reports state that the Peoples Gas Co. will build a gas plant here. H. W. Bargett, of Boston, is interested.

LITTLE FALLS, N. Y.—The question of building an electric plant is being considered by Aldermen Creagh and Cavanaugh.

NEW YORK, N. Y.—Bids are asked until June 22 for a generating set, three 300-HP. boilers, etc., for the navy yard. Specifications may be seen at the office of Engineering News. M. T. Endicott, Ch. Bureau Yards and Docks, Navy Dept., Washington, D. C.

ROCHESTER, N. Y.—Bids are being received by the Citizens' Electric Light & Power Co. for building an electric plant to cost about $1,200,000. M. J. Warner, Gen. Mgr.

ROME, N. Y.—The Rome Gas Light Co. has transferred its property to the Rome Gas, Electric Light & Power Co., controlled by Jos. T. Lynn, of Detroit, and Martin B. Daley, of Toledo, O. The new owners, it is stated, will improve the plant at a cost of about $100,000.

YOUNGSTOWN, N. Y.—Henry C. Howard, Pres. Bank of Niagara Falls, proposes to form a company to build an electric plant and water-works.

ATLANTIC CITY, N. J.—The Bowden Engineering Co. is preparing plans for a municipal plant.

GIBBSBORO, N. J.—Bids for constructing a power plant for John Lucas & Co. will soon be received by Hales & Ballinger, Archs., Philadelphia.

CONNELLSVILLE, PA.—The Pittsburgh, McKeesport & Connellsville St. Ry. has begun improvements on its powerhouse in New Haven. The permanent plant will be located at Valley and will be erected in a year.

MEDIA, PA.—Plans are reported as being prepared for an electric plant. Address E. M. Harvey, S. A. Field and W. H. Hardcastle, of the committee.

CUMBERLAND, MD.—Reports state that the council will extend the electric plant.

ASHEVILLE, N. C.—The Asheville Electric Co. has asked for a franchise for this place and Weaverville.

GREENSBORO, N. C.—The Greensboro Electric Co. will begin work this week on its proposed plant, according to reports.

ROCK HILL, S. C.—This place proposes to issue $60,000 of bonds for an electric plant and water-works.

ALBANY, GA.—An election will be held June 19th to vote on the question of issuing $20,000 of bonds for an electric plant.

MADISON, GA.—The Madison Power Co. has been granted a franchise for an electric plant, according to reports.

WAYCROSS, GA.—Reports state that the Waycross Ice Co. proposes to build an electric plant.

NASHVILLE, TENN.—Bids are asked until June 20 for the purchase of $150,000 of bonds for the proposed electric plant, the contract for which has been let to the T. J. Mooney Co. J. P. Byrne, Cy. Recdr.

WINCHESTER, TENN.—Bids are asked until June 26 for constructing an electric plant and water-works, to include three 30-in. turbine, 90 to 120 K-W. multiphase alternator, 6 miles of pole line, etc. Kirkpatrick & Johnson, Engrs., Jackson, Miss.; C. F. Gattis, Secy.

BOWLING GREEN, O.—Reports state that President Kerper, of the new electric railway, proposes to build a power plant at once to cost about $200,000.

COLUMBUS, O.—F. W. C. Bailey is preparing plans for the proposed municipal electric plant.

DELAWARE, O.—The Columbus, Delaware & Northern Electric Ry. Co. will build a powerhouse at Stratford to cost about $80,000.

DOYLESTOWN, O.—G. W. Barkhamer, Mayor, writes us that bids will be wanted in July for constructing an electric plant to cost $9,000. Chas. A. Sturtevant, Engr., Chicago.

HUBBARD, O.—An election to vote on the question of issuing $8,000 in bonds for an electric plant and $2,000 for a chemical fire engine was held June 8.

NEWARK, O.—S. M. Winn has been granted a franchise to furnish this place with natural gas.

BUCHANAN, MICH.—Bids are asked by Chas. A. Chapin, 520 Chamber of Commerce Bldg., Chicago, Ill., for a water power development, as stated in our advertising columns.

MAYVILLE, MICH.—This place has voted to issue $5,000 for an electric plant.

MUSKEGON, MICH.—The Muskegon Traction & Lighting Co. has petitioned the council for the right to erect a $100,000 powerhouse on the site of the old gas works.

ROGERS, MICH.—P. H. Hoeft has been awarded the contract for constructing an electric plant.

CHICAGO, ILL.—John C. Backer, of the Stock Yards, is reported as having plans prepared for an electric plant to cost $30,000.

PLAINFIELD, ILL.—Reports state that an electric plant will be built and that the water-works will be extended.

AMHERST, WIS.—B. E. Dwinell & Co. have been granted a 15-year franchise for an electric plant.

BURLINGTON, IA.—The council will soon ask for bids for lighting this city with electricity.

MUSCATINE, IA.—Reports state that the council will soon ask for bids for lighting the streets with electricity.

NEW LONDON, IA.—The council has sold $6,000 of bonds for the proposed electric plant.

BUTLER, MO.—Bids are asked until June 27 for constructing an electric plant, as stated in our advertising columns. Owen Ford, Consult. Engr., 710 Security Bldg., St. Louis, Mo.; J. L. Stanley, Cy. Clk.

INDEPENDENCE, MO.—Bids are asked until June 25 for constructing an electric plant, as stated in our advertising columns. Owen Ford, Consult. Engr., St. Louis.

JOHNSON, MO.—McMillen & Simpson have been granted a 20-year franchise for an electric and heating plant.

MEXICO, MO.—H. L. Steppelman, R. D. Worrell and A. J. Winscott are preparing a report for the council on the question of the city buying or building an electric plant.

HOT SPRINGS, ARK.—The question of a municipal electric plant is being considered.

CENTRALIA, WASH.—T. Hoss has asked for a franchise to build an electric plant to cost $5,000.

DAYTON, WASH.—C. B. Woodworth, Mayor, writes us that this place has voted against issuing bonds for a plant.

WENATCHEE, WASH.—We are informed that the Wenatchee Electric Light & Power Co. want bids for constructing its proposed plant, the water wheels for which are already installed.

## BRIDGES

RUTLAND, VT.—Bids are asked until June 24 for building a steel truss bridge at Center Rutland, to take the place of the Ripley bridge. The bridge to have two spans, one 75 ft. and the other 100 ft.; 16-ft. roadway; as stated in our advertising columns. H. B. Whittier, Purchasing Agent.

QUINCY, MASS.—The council passed an order appropriating $2,300 for a foot bridge over the track at Warren Ave., over the Mayor's veto, on June 3.

COHOES, N. Y.—The plan for the viaduct across the Ontario St. Island has been submitted to the taxpayers of the island. It provides for a 20-ft. roadway with a 7-ft. walk on either side. The cost will be about $32,000, $16,000 of which will be paid by the Delaware & Hudson R. R., $8,000 by the city of Cohoes and $8,000 by the state.

FAIRPORT, N. Y.—At a town meeting on June 1 the proposition to issue bonds to the amount of $3,000 for the purpose of building a stone arch over the Irondequoit Creek, on the Fairport-Rochester road, was carried.

CAMDEN, N. J.—Plans have been prepared by County Engineer Albertson for a new county bridge across Cospers Creek at East Pine St., for which $16,000 has been appropriated by the board of freeholders.

LAKEWOOD, N. J.—Bids are asked until June 17 for constructing a draw or substructure, either of iron or wood, at the Mantoloking bridge. Wm. J. Harrison, Chn.

DOYLESTOWN, PA.—The county commissioners have awarded a contract for repairs to the bridge over the Tohickon Creek to Nelson & Buchanan, at $3,000. The matter of building a new bridge in Plumstead township, near Danboro, will be acted on by the board at their meeting on June 17.

LANCASTER, PA.—The county commissioners have received the following bids for building an iron bridge over the Conestoga Creek at Graeff's Landing, to take the place of the present wooden structure: Berlin Construction Co., $12,140; King Bridge Co., $12,900; American Bridge Co., $10,975; Nelson & Buchanan, $15,555; Owego Bridge Co., $12,800; Hay Foundry & Iron Works, $17,995; Lancaster County Ry. & Light Co., $6,950; W. W. Lindsay & Co., $14,300; Penn Bridge Co., $12,777.

POTTSVILLE, PA.—Bids are asked until June 17 for erecting a wooden bridge in Hegins Township. H. J. Muldoon, County Controller.

FREDERICK, MD.—The county commissioners have decided to erect an iron bridge over Bush Creek, near Monrovia.

CALHOUN, GA.—The county commissioners have selected a site for a new wagon bridge across the Oostanaula River, at Gordon's Ferry.

OGLETHORPE, GA.—Bids are reported wanted until July 23 for a steel bridge. A. H. Perry, Clk.

KNOXVILLE, TENN.—The engineering department of the Southern Ry. is reported to be preparing to rebuild the bridge over the Watauga River as soon as possible, as well as several others, recently washed away.

AKRON, O.—Bids are asked until June 22 for constructing an iron bridge over the Ohio Canal at Cherry St. W. A. Durant, Clk. Bd. Comrs.

ASHLAND, O.—The plans for the proposed bridge between Ashland and Ironton have been adopted by the Ashland & Ironton Bridge Co. The bridge will span the Ohio River. It will have a total length of 1,736 ft., exclusive of approaches. The channel span will be 775 ft. in length. The total width, 50 ft.

CLEVELAND, O.—The chief engineer of the board of public service will probably be instructed to prepare plans for a bridge across Kingsbury River, at Tod St., Francis to Kinsman St.

MT. VERNON, O.—R. F. and G. A. Jones, of this city, are reported to have secured the contract from the Canton & Akron Electric Ry. for the construction of bridges on 15 miles of the company's line.

TERRE HAUTE, IND.—The county council has accepted the plans for the new steel bridge over the Wabash River at Wabash Ave. prepared by Prof. Howe of the Rose Polytechnic Institute and J. E. Starbuck. The bridge will cost between $100,000 and $150,000. Two plans were accepted. The council has authorized the commission to advertise for bids for building the new bridge.

BATTLE CREEK, MICH.—Bids are asked until July 1 for constructing a steel bridge across the Battle Creek stream on North Jefferson St. Geo. W. Hamm, Cy. Recorder.

DANVILLE, ILL.—Bids are asked until June 20 for constructing a wagon bridge on Cherry St., across Stony Creek, to be 45 ft. long and 16 ft. wide. R. E. Lloyd, Clk.

MILWAUKEE, WIS.—The Onalaska town board has awarded the contract for the new bridge over Halfway Creek, near Frank Schaller's farm, to the Clinton Bridge Co., at $1,225.

DES MOINES, IA.—The council has ordered the board of public works to readvertise for bids for a Melan arch bridge, of brick and concrete, over the Des Moines River at North Sixth St., to be of three spans, each 100 ft. in length, on plans to be prepared by the city engineer.

DUBUQUE, IA.—Local papers state that Lenihan & Molo have submitted the lowest bid for constructing the substructure of the Eagle Point high bridge, their bid being $47,000.

TOPEKA, KAN.—The county commissioners have received the following bids for constructing the Rossville and Sardou Ave. bridges. The contract for the Rossville Ave. bridge, over the Kaw River, was let to the Missouri Valley Bridge & Iron Works, of Leavenworth, at $12,850: John Gilligan, Rossville Ave. bridge, $14,300, Sardou Ave. bridge, $23,900; Midland Bridge Co., Rossville Ave. bridge, $14,800, Sardou Ave. bridge, $26,500; E. L. Deldine, Rossville Ave. bridge, $14,500, Sardou Ave. bridge, $25,900; Canton Bridge Co., Rossville Ave. bridge, $14,500, Sardou Ave. bridge, $24,000; J. W. Hoover, Rossville Ave. bridge, $13,350, Sardou Ave. bridge, $19,500; A. M. Bledgett, Rossville Ave. bridge, $14,800; Missouri Valley Bridge Co., Rossville Ave. bridge, $12,850, Sardou Ave. bridge, $23,500; A. McLouth, Rossville Ave. bridge, $12,500, Sardou Ave. bridge, $19,500.

WELLINGTON, KAN.—The county commissioners have decided to advertise for bids for the reconstruction of the Adams bridge across Bluff Creek, west of Caldwell.

MONTICELLO, MO.—Bids are asked until June 24 for constructing three steel bridges in Lewis county. Geo. H. Roberts, County Comr.

BAY CITY, TEX.—The question of issuing $40,000 in bonds for bridge construction will be submitted to vote on July 2.

DENVER, COLO.—Surveys are being made by the board of public works for the proposed viaduct of steel from 7th and Colfax Sts., in West Denver, along the line of Colfax Ave., with two branches on the west side of the river, one on Boulevard F, and the other branching toward Villa Park. The estimated cost is $700,000. Everything is now in readiness for work on the plant.

OROVILLE, CAL.—The supervisors' committee has recommended the construction of a bridge across the Honcut Creek at Bainbridge crossing, to have one 50-ft. span, with two 12-ft. approaches.

EUREKA, NEV.—The following bids were recently received by the county commissioners for erecting a steel bridge near Blowawe: San Francisco Bridge Co., $2,942; Pacific Construction Co., $4,200; Gillette & Herzog Mfg. Co., three designs, $4,050, $3,875, $3,785, respectively.

BOISE, IDAHO.—The proposition to issue bonds to the amount of $14,700 to build a bridge across the Boise River has been carried.

WEISER, IDAHO.—The old bridge across the Weiser River will be replaced this summer by a new structure, at a cost of $5,500.

## BUILDINGS.

HALLOWELL, ME.—The contract for the new state industrial school building at this place has been let to L. E. Bradstreet, contractor, Hallowell. Contractor Bradstreet has also received a contract for fireproofing and remodeling the state home at Augusta.

MILFORD, MASS.—Bids are asked until June 17 for additions and alterations to the school houses at North Bellingham and Bellingham Center. Horace A. Brown, Chn. School Bldg. Com., Home Bank Bldg.

SPRINGFIELD, MASS.—It is reported that the date of receiving bids for erecting a 12-room school building at Ware has been extended until June 17.

WALTHAM, MASS.—Bids are wanted by the superintendent of public buildings until June 20 for erecting a brick primary school building in Chestnut St. Hartwell, Richardson & Driver, Archs., 62 Devonshire St., Boston.

BINGHAMTON, N. Y.—Plans are said to have been prepared for a new depot in this city, to be of brick, and two stories high. C. W. Buchholz, Ch. Engr., 21 Cortlandt St., New York.

BROOKLYN, N. Y.—Fuller & O'Connor, contractors, have received a contract for repairs to the Homeopathic Hospital in Cumberland St., to cost $39,200.

BUFFALO, N. Y.—J. Blaby, Arch., Palmyra, has prepared plans for a new school, to cost about $39,000. The plans are now in the hands of the board of education.——The State Commission in Lunacy has approved plans for an addition to the Rochester State Hospital, to cost $240,000.

MIDDLETOWN, N. Y.—Bids are asked until June 24 for installing a refrigerating apparatus for the cold storage building at Middletown State Hospital. Grinnell Burt, Pres. Bd. Mgrs.

SAYVILLE (L. I.), N. Y.—The Long Island R. R. Co. has decided to erect a new depot at Sayville. J. H. Cummin, Supt. Bldgs., Long Island City.

NEW YORK, N. Y.—Plans have been filed by the J. M. Horton Ice Cream Co. for a 5-story brick factory and stable at 213-21 East 24th St., to cost about $50,000. Cleverdon & Putzel, Archs., 41 Union Square West; by the Chamber of Commerce, for a 4-story brick and stone office building at 59 to 65 Liberty St., 107 x 80 ft., to cost about $500,000. James S. Baker, Arch., 156 Fifth Ave.; by Lena Billings, 279 Madison Ave., for two 6-story brick dwellings, 37 x 84 ft., in 35th St., to cost $80,000. Andrews & Withers, Archs., Newport, R. I.

NEW YORK, N. Y.—A 20-story building will be erected by the George A. Fuller Construction Co. on the site of the Boreel Bldg., purchased some months ago by that company.——Plans have been prepared by Clinton & Russell, Archs., Mutual Life Bldg., for an 18-story building at Maiden Lane and Broadway.——Henry Siegel, of the Siegel-Cooper Co., will erect a new 10-story fireproof department store on the site of the buildings now occupied by R. H. Macy & Co., at Sixth Ave. and 14th St., to cost

about $1,000,000. The contract for the building is said to have already been let to the George A. Fuller Construction Co.

WEST POINT, N. Y.—The following bids were received on June 3 for constructing officers' quarters: Geo. L. Walker, 156 Fifth Ave., New York, $44,400; A. W. Reynolds, Binghampton, N. Y., $56,922; Campbell & Dempsey, Kingston, N. Y., $35,500; H. R. Gillingham & Co., Brown Ave. and Bronxdale Road, New York, $38,892; W. A. & A. E. White, Girard Bldg., Philadelphia, $49,877; H. W. Otis, Kingston, N. Y., $43,250; Jas. O'Toole, 1064 Elsmere Place, New York, $69,960.

ATLANTIC CITY, N. J.—E. G. Shreve has received a permit for the erection of an apartment house on New York Ave., between Atlantic and Pacific Aves., to cost $75,000.

UNION HILL, N. J.—The board of education has decided to build a new school house, to cost about $50,000.

EASTON, PA.—The consistory of the First Reformed Church has been authorized to sell the old German Reformed burying ground as a site for the new Carnegie library, to cost $50,000.

HARRISBURG, PA.—Bids are asked until June 25 for installing an electric elevator in the U. S. court house and post-office building in this city. James Knox Taylor, Supervising Architect, Treasury Dept., Washington, D. C.

PITTSBURG, PA.—Gault & Giffen are said to have preliminary plans for a building near Schenley Park, to cost about $75,000. It will be fireproof throughout, and equipped with two elevators.——The county commissioners have awarded the contract for the erection of the morgue on the site of the old armory building in Diamond St. to Wm. Miller & Sons., at $196,800. It will be completed by April 1, 1902.

SWISSVALE, PA.—Bids are asked until June 15 for erecting an 8-room school at McClure Ave. and Maxwelton St., this place. H. C. Coulter, Secy.; Rieger & Currier, Archs., 407 Smith Block, Pittsburg.

FORT DU PONT, DEL.—The bid of H. C. Clark, of Delaware City, Del., for one field officers' quarters and two single sets of officers' quarters, at $20,300 for all work, has been recommended for acceptance. The other bidders were: Benjamin T. Collins, Milford, Del.; Edwin K. Welch, 2318 N. 19th St., Philadelphia, Pa.; John G. Collins, Bishopville, Md.; L. O. Howell Co., 2013 Columbia Ave., Philadelphia; Healy & Bro., 608 N. Calvert St., Baltimore, Md.; T. B. Ferguson, Lewisville, Md.; Harry A. Miller, Wilmington, Del.

ANNAPOLIS, MD.—Bids are asked until June 20 for constructing a marine barracks and officers' quarters, and for improving site, laying sewers, etc., and building bridge at the Naval Academy. F. L. Denny, Q. M., U. S. M. C.

BALTIMORE, MD.—Local papers state that plans have been distributed for estimates on the construction of the new Masonic Temple at Frederick, Md., to cost $50,000. The building will be 4 stories, 50 x 125 ft., and equipped with one elevator.

WASHINGTON, D. C.—Bids are asked until June 22 for building the structural steel work for a roof over the forge shop, navy yard. M. T. Endicott, Ch. Bureau Yds. and Docks, Navy Dept.——Bids are asked until June 22 for the installation of water-tube boilers and induced-draft apparatus for the Interior Department building. E. A. Hitchcock, Secy. Dept. of Interior.——Bids are asked until June 18 for constructing one single set of non-commissioned officers' quarters and other buildings at Fort Washington, Md. Abe S. Bickham, Capt., U. S. A., 419 North Washington St., Alexandria, Va.

ROANOKE, VA.—The contract for the additions to the Norfolk & Western R. R. shops, to cost about $150,000, has been awarded to John P. Pettyjohn, of Lynchburg. The additions will be as follows: machine shops, 72 x 204 ft.; blacksmith shop, 28 x 99 ft.; boiler shop, 50 x 65 ft.; tool shop, 35 x 75 ft.

WHEELING, W. VA.—Edward B. Franzheim, Wheeling, writes us that the general contract for the new 5-story theatre and office building, 110 x 134 ft., has been let to the Kleeves-Kraft Co., Wheeling. The building completed will cost about $150,000. Bids will be received for the electrical work, elevators, heating, seating and stage equipment.

RALEIGH, N. C.—Bids are asked until June 22 for building a textile building at the A. & M. College, to be 75 x 130 ft. Address Textile Building, A. & M. College, Raleigh.

CHARLESTON, S. C.—The lowest bid received by Capt. J. C. Sanford, U. S. Engrs., for a new fireproof storehouse near Fort Moultrie, S. C., was submitted by Geo. H. Crafts, at $4,795. His bid was recommended for acceptance. The other bidders were Simmons & Magrant, Charleston, S. C.; W. R. Bonsal & Co., Hamet, N. C., and Henry Monk, Pensacola, Fla.

ATLANTA, GA.—Bruce & Morgan, Archs., inform us that bids will be received about July 15 for the Century building, to be built by the Geo. W. Scott Investment Co.——The board of trustees of the Presbyterian Hospital has selected a site for the location of the new hospital. Bids will be received about July 1.

JACKSONVILLE, FLA.—T. T. Cullens writes us that bids will be received around Dec. 1 for the new 6-story hotel in this city, to be 210 x 210 ft. The building will be steam heated and equipped with electric elevators. It will cost about $200,000. Dodge & Cullens will build it. Frank V. Merrell, Arch., Chicago.

JACKSONVILLE, FLA.—Geo. P. Glenn, Supt. Schools, writes us that competitive plans are now in preparation by several architects for a brick and stone school, 125 x 180 ft., to cost $30,000. Hot water heating system and fan system of ventilation will be used.

KNOXVILLE, TENN.—E. J. Sanford, Knoxville, informs us that the new office building in this city, to be build by Dr. Deadrick and himself, will be 7 stories, 75 x 100 ft., of brick, and equipped with steam heat and electric lights. The cost will be about $75,000. Bauman Bros., Archs.——The contract for the erection of the new theatre has been let to Frank Cox, of Chicago. It will seat 1,924 people.

MEMPHIS, TENN.—Local papers state that building permits have been issued as follows: Napoleon Hill, 4-story brick house on Madison St., near Third, to cost $30,000; E. U. Whitfield, a 4-story warehouse at 411-3 Shelby St., to cost $30,000; Overton Lee, a 5-story brick house, at 259-63 Main st., to cost $90,000; Memphis Medical College, 2-story brick building, to cost $85,000.

LORAIN, O.—The mayor writes us that the election held on June 6 to vote on the question of issuing $55,000 in bonds for two school houses in this city was carried. H. O. Wurmser, Arch., Lorain.

JEFFERSONVILLE, IND.—Bids are asked until June 14 for constructing powerhouse with boilers; also for water tank and trestle. C. R. Barnett, Deputy Q. M. Gen.

CHICAGO, ILL.—S. M. Seator, Arch., 34 Clark St., is preparing plans for a 3-story apartment house for Archibald Hood, to be erected on the site of the old Coliseum on 63d St., at a cost of $70,000. It will be 138 x 119 ft.——E. M. Newman, Arch., 290 Rush St., has prepared plans for a 3-story apartment house for John Hamilton, to be erected at 5440-6 Michigan Boulevard. It will be 96 x 100 ft., and will cost $70,000.——Charles A. Strandel, Arch., 78 La Salle St., has prepared plans for a 3-story apartment house, to be erected on Winthrop Ave., near Leland. It will be 50 x 67 ft., and will cost $50,000.——A building permit has been secured by A. R. Clark & Co. for a 4-story brick apartment house at 1968-70 Deming Place, to cost $40,000.——Plans are being prepared by J. W. Foster, Arch., Armour & Co., Stock Yards, for an addition to their packing plant at the Union Stock Yards, to be 5 stories, 162 x 375 ft., costing about $175,000.

CHICAGO, ILL.—Bids are wanted by the committee on buildings and grounds until June 14 for work in several school buildings. W. B. Mundie, Arch., Room 117 Schiller Bldg.

DECATUR, ILL.—The Decatur Public Library Board has decided to invite architects to submit plans for the $60,000 Carnegie library building in this city.

DETROIT, MICH.—Louis Kamper, Arch., 58 Cadillac Square, informs us that bids will be received in about three weeks for the new office building for the People's Telephone Co., to be 6 stories, 80 x 90 ft., and to cost $100,000. The building will be equipped with steam heating, electric wiring, hydraulic elevators, engines and dynamo.

GRAND RAPIDS, MICH.—The new high school building in this city will be 2 stories, 73 x 168 ft., and will cost $55,000. Williamson & Crow, Archs., informs us that the building will be of brick and stone, and will be equipped with a fan system of heating and ventilating and electric lighting.

ANTIGO, WIS.—Bids are asked until June 20 for erecting a church for St. Mary's Congregation. W. E. Reynolds, Arch., Green Bay.

JANESVILLE, WIS.—The contract for a new stone church and monastery to be built in Green Bay by the Franciscan Fathers of Sobelsi has been let to J. A. Servotto at $48,253.

MANKATO, MINN.—M. B. Wood, Pres. Library Bd., informs us that the library board has selected Jardine, Kent & Jardine, Archs., 1262 Broadway, New York, to prepare plans for the new Carnegie library in this city, to cost about $40,000.

ST. PAUL, MINN.—Plans have been filed by A. L. Orr, Arch., for three double flat buildings, to be erected on the west side of Kent St., between Ashland and Holly Avs., at a cost of $50,000.

SANDSTONE, MINN.—Bids are asked until June 25 for erecting a school building at Sandstone. Albert L. Glasow, Secy. School Bd.

GREAT FALLS, MONT.—Bids are wanted by the county commissioners until July 1 for constructing the Cascade county courthouse, to be erected at Great Falls.

HELENA, MONT.—The following bids were received by the Supervising Architect, Treasury Dept., Washington, D. C., on June 3, for the government building in this city: Angus Ginnelli, Chicago, Ill., $297,500, time 22 months; George W. Deeks & Co., St. Paul, Minn., $299,300, two years; Congress Construction Co., Chicago, $268,717, 22 months; D. H. Hayes Co., Chicago, $276,968, 20 months; R. A. Griefen, Chicago, $268,600, 22 months; Amberg Granite Co., Chicago, $303,000, 22 months; Montana Building Co., Helena, $323,478, 22 months.

JEFFERSON CITY, MO.—The Missouri Pacific Ry. has awarded the contract for building the proposed 20-stall roundhouse in this city to H. J. Wallau, at $33,000.

AUSTIN, TEX.—Bids are asked until July 10 for constructing fire escapes at seven state institutions. Jos. D. Sayers, Governor.

DURANT, IND. TER.—Bids are asked until June 22 for building the Presbyterian College building at this place. A. C. Risner, Chn. Bldg. Com.; John Tullock, Arch., 16 Linz Annex, Sherman, Tex.

SHANIKO, ORE.—The matter of building a jail in this city is under consideration.

LINCOLN, CAL.—Bids are asked until June 24 for building a school house and out buildings. Wm. Jones, Clk.

LOGAN, UTAH.—Estimates are being taken for the new buildings for the agriculfural college here, to cost about $50,000. Bids for same will be received on June 18, according to reports.

SALT LAKE CITY, UTAH.—W. Pinney, Arch., 534 North West St., informs us that the date of awarding contracts for the new school house in this city, to be 3 stories, 157 x 103 ft., has not yet been decided by the board of education. Steam-heating equipment will be installed.

KINGSTON, ONT.—Bids are asked until June 15 for erecting the proposed arts building, Queen's University, Kingston. J. B. McIvor, Secy.-Treas. Queen's University.

TORONTO, ONT.—Bids are asked until June 14 for the repairs, alterations and improvements required at the various schools during the summer vacation. W. C. Wilkinson, Secy.-Treas. Pub. School Bd.

KAMLOOPS, B. C.—Bids are asked until June 19 for supplying a heating apparatus at the public building in this place. J. R. Roy, Secy. Pub. Wks., Ottawa, Ont.

## WATER-WORKS.

BOSTON, MASS.—Bids are asked until June 18 for laying about 12,220 ft. of 24 and 20-in. c.-i. water pipe in Stoneham. W. N. Davenport, Secy. Metropolitan Water and Sewerage Bd., 1 Ahsburton Place.

BOSTON, MASS.—Bids are asked until June 18 for laying about 5,820 ft. of 24-in. and 6,400 ft. of 20-in. cast-iron water pipes in Stoneham. Wm. N. Davenport, Secy.

NORTHAMPTON, MASS.—Henry Warner, of this place, Jehill Vaughn, of Fonda, N. Y.; Stone & Thurson, 220 Broadway, New York; G. M. Atkins, Palmer, Mass.; Newell & Snowling, Worcester, Mass.; Seymour, Newell & Ehle, Springfield, Mass.; C. H. Eglee & Co., Boston; Jas. Mulcahey, Northampton; Jesse Moulton, Boston; Monroe & Crockett, Boston; Daniel O'Connell & Son, Holyoke, Mass.; Thos. Kelly, Northampton; Cordner Bros., Chicopee, Mass.; Hiram Taylor, Northampton, and R. D. Maynard, Springfield, Mass., submitted bids for the improvements to the works. The itemized bids will be published next week.

FALLS VILLAGE, CONN.—The Falls Village Water & Light Co. has been incorporated to build works and a gas plant. H. C. Gaylord, Pres.; J. S. Tracy, Secy.; I. P. Hornbeck, Supt.

NEW HAVEN, CONN.—It is stated that the New Haven Water Co. has announced that it is prepared to spend about $1,000,000 for a filter plant, etc.

BINGHAMTON, N. Y.—The following bids were received by the water commissioners June 6 for constructing a filter plant, as advertised in Engineering News: D. R. Grant, Pres. Water Comrs.: International Construction Co., Newark, N. J., $56,856; The N. Y. Continental Jewell Filtration Co., New York, $66,000; Norwood Engineering Co., Florence, Mass., $41,475; The Jackson Filter Co., St. Louis, Mo., $49,387.

CARTHAGE, N. Y.—Bids are asked by the village trustees until June 17 for the purchase of $6,000 of 4% bonds for an auxiliary pumping plant. W. S. Schwarz, Clk.

CINCINNATUS, N. Y.—Plans for works are reported as being prepared.

GLENS FALLS, N. Y.—This place voted June 11 on the question of buying the works of the Spring Brook Water Co. for $94,000.

HORNELLSVILLE, N. Y.—Reports state that bids will soon be asked by the mayor for the purchase of $175,000 of 3½% 20-year bonds for the proposed municipal works. Benton McConnell, M. F. Smith and J. E. Santee are on the water board.

LOCKPORT, N. Y.—City Engineer Frehse is preparing plans for a 16-in. water main.

SAVONA, N. Y.—The question of works is again being considered; pop., 612.

WESTFIELD, N. Y.—Bids are asked until June 28 for furnishing 225 pieces of 4 and 6-in. mains, pipe, valves, pig lead, and for laying 3,000 ft. of pipe, etc. J. W. Crandall, Supt. and Secy. Water Comrs.

BOONTON, N. J.—The Mount Olive Spring Water Co. has been incorporated with a capital of $100,000 by Robt. F. King, Jacob M. Van Fleet and Wm. M. Dunlap.

NEWARK, N. J.—Bids are asked until June 20 for furnishing cast-iron water pipe, specials, etc., as described in our advertising columns. M. R. Sherrerd, Engr. and Supt. Dept. Water Supply.

CHANFONT, PA.—The question of works is being considered. Address H. A. James.

PHILADELPHIA, PA.—Plans have been prepared by the department of public works for a new testing plant at the Torresdale pumping station.

PITTSBURG, PA.—Bids will be asked in a few days for the proposed filter plant. G. W. Wilson, Dir. Pub. Wks.

READING, PA.—Bids are asked until Aug. 6 for furnishing and erecting a 3,500,000-gallon filter plant, as stated in our advertising columns. Geo. H. Felix, Pres. Bd. Water Comrs.; E. L. Nuebling, Supt. and Engr.

TAMAQUA, PA.—Reports state that the Lehigh Coal & Navigation Co. will at once commence to enlarge the dam at Nesquehoning. It will cover 50 acres and have a capacity of 3,000,000 gallons, being able to furnish water for all the company's collieries for eight months.

YORK, PA.—The York Water Co. proposes to build a 5,000,000-gallon storage basin this summer. John Berkinbine, Consult. Engr., Philadelphia.

RICHMOND, VA.—The council proposes to build a settling basin a few miles above the city.

FAIRVIEW, W. VA.—Reports state that this place proposes to build works.

STARK, FLA.—Reports state that contracts will soon be let for the proposed works. Col. W. T. Weeks, Chn.

HATTIESBURG, MISS.—A. Fairley, Cy. Clk., writes us that the works will require new pumps and, in fact, all lines of supplies, except a standpipe. The town recently voted $30,000 for the improvements.

DYERSBURG, TENN.—W. A. Fowlkes, Jr., Mayor, writes us that no bids for works and an electric plant franchise were received June 1.

KNOXVILLE, TENN.—Local papers state that the Knoxville Water Co. will soon begin the construction of a new filter plant, new mains, etc. F. C. Kimball, Supt.

MOUNT PLEASANT, TENN.—We are informed that the contract for works has been let to P. H. Porter, of Clinton, Ky., at $6,721. The contractor will furnish Chicago Bridge & Iron Co.'s tank and tower, Fairbanks-Morse pumping plant, U. S. Cast-Iron Pipe & Foundry Co.'s pipe, etc. Granbery Jackson, Engr., Mount Pleasant.

TULLAHOMA, TENN.—J. B. Carroll, Mayor, writes us that this city has voted to issue $25,000 in bonds for works. The council will proceed at once with the work to put in a plant.

WINCHESTER, TENN.—Bids are asked until June 26 for constructing works and an electric plant, to include a a crib dam, race flume, three 30-in. turbines, 4½ miles of 4 to 8-in. mains, 48 hydrants, 30 valves, etc. Kirkpatrick & Johnson, Engrs., Jackson, Miss.; C. F. Gates, Secy.

BARBERTON, O.—O. C. Barber has been granted a franchise to build works.

BROOKVILLE, O.—The question of issuing bonds for works is being considered.

COLUMBUS, O.—It is proposed to build a 24-in. main in Long St., at a cost of about $30,000.

MIDDLEBOURNE, O.—The council is reported as making arrangements to begin work on the proposed plant.

PAULDING, O.—H. E. Spring, Mayor, writes us that an election will be held June 27 to vote on the question of issuing $35,000 in bonds for works.

SPRINGFIELD, O.—The question of securing a larger supply of pure water is being considered, and it is probable that the city will buy water rights.

TOLEDO, O.—Plans for a new water supply from Swan Creek is being considered.

LINTON, IND.—Bids are asked until June 18 for the purchase of a franchise for constructing and operating works, as stated in our advertisng columns. G. H. Humphreys, Clk.

GRAND RAPIDS, MICH.—Local papers state that City Engineer Anderson is again preparing specifications for bidders for a new water supply. Bidders must furnish plans, details, etc., of the new works.

HANCOCK, MICH.—The question of letting a contract for a pumping station is being considered.

PONTIAC, MICH.—The question of issuing $50,000 in bonds for a new pump, seven miles of mains, etc., will be voted upon July 8. Address Superintendent Monroe; J. E. Orondige, Cy. Clk.

ST. LOUIS, MICH.—Bids are asked until June 25 for furnishing and installing turbine water wheel, steam engine, power pump, boiler, etc., as described in our advertising columns. A. T. Maltby, Engr., 1212 Fisher Bldg., Chicago, Ill.; F. A. Newgrean, Clk. Bd. Pub. Wks.

AVERYVILLE, ILL.—The village trustees are considering the question of municipal water-works and electric plant. Address President Fisher.

JOLIET, ILL.—The Bates Machine Co. has been awarded the contract at $5,898 for furnishing a boiler for the water-works. Bids are asked until June 17 for developing a water supply of 6,000,000 gallons from deep wells by means of a shaft and tunnel system. Check, $5,000. J. B. Mount, Mayor; H. A. Stevens, Cy. Engr.

TALLULA, ILL.—W. B. Taylor, Civil Engr. on the Chicago & Alton Ry., is making surveys for a pumping station here for the railway.

FORT ATKINSON, WIS.—Peter Galloway, of Racine, Wis., has been awarded the contract at about $20,000 for laying the mains for the new works.

GLIDDEN, WIS.—D. F. Tyler, of Glidden, has been granted a 10-year franchise for works.

OSHKOSH, WIS.—Reports state that it is proposed to install a filter plant at the works to cost about $5,000.

WHITEFISH BAY, WIS.—The question of works is reported as being considered.

MORRIS, MINN.—Reports state that arrangements for building the works are being made by T. A. Callahan.

MORTON, MINN.—This place has voted to build works to cost about $8,000.

MURDOCK, MINN.—This place has voted to issue bonds for works and an electric plant.

BELOIT, KAN.—The works and electric plant, owned by A. T. Rodgers, are to be extended at a cost of about $10,000.

MOUNDRIDGE, KAN.—The council, it is stated, will soon ask for bids for works to cost about $8,000.

MITCHELL, S. DAK.—The council is reported to have adopted Engineer Nelson's plans for improving the works.

SHERIDAN, WYO.—F. H. Stotts, Town Clk., writes us that the contract for 15,120 ft. of new mains, dam, etc., has been let to Alf. Diefendenfer, of Sheridan, at $22,587. The U. S. Supply Co., of Omaha, Neb., submitted the only bid at $24,250.

FORSYTH, MONT.—The question of better fire protection is being considered. H. H. Fletcher, Chn. Com.

JONESBORO, ARK.—The council is reported as arranging to buy the works and to build a sewerage system for $97,000.

PARAGOULD, ARK.—The question of building a sewerage system and water-works is being considered.

EL PASO, TEX.—W. E. De Groot, of Los Angeles, Cal., has asked for a franchise for works.

VAN VLECK, TEX.—The Van Vleck Town Co., it is stated, will soon sink an artesian well for a water supply.

FORT GRANT, ARIZ.—Bids are asked until 11 a. m. for a reservoir and pipe line at Fort Grant. Maj. J. W. Pope, Ch. Q. M., Denver, Colo.

DENVER, COLO.—Reports state that C. L. Harrison, of Harrison & Johnson, of Joliet, Ill., is completing a reservoir for the Denver Union Water Co. to cost about $1,000,000.

MONUMENT, COLO.—Mayor Higby has appointed M. Chandler, Dr. Wm. McConnell and F. W. Bell to investigate the matter of works.

UTE INDIAN AGENCY, COLO.—We are informed that A. Motschnian, 707 Security Bldg., Chicago, Ill., has been awarded the contract at $31,530 for building water and sewer systems, brick dormitory, gas house, etc. The following also submitted bids: Monarch Acetylene Gas Co., Omaha, Neb.; Peterson & Vandegrift, Main Ave. and 12th St., Durango, Colo.; Walter D. Lovell, Des Moines, Ia.; Wm O. Morrison, P. O. Box 366, Colorado City, Colo.; Jas. H. Owen, 240 Lumber Exchange, Minneapolis; Michael J. Cummin and John Quinn, Durango.

BAKER CITY, ORE.—Bids are asked until July 10 for the purchase of $45,200 of bonds for the proposed new gravity works. The population of the town increased 156% from 1890 to 1900. The water supply will be secured from Elk Creek. Pop., 8,000. J. G. Kelly, Engr., Portland, Ore.; R. D. Carter, Mayor; Louis Crabill, Chn.

COTTAGE GROVE, ORE.—J. E. Youngby, Recdr., writes us that about 11,000 ft. of 4-in. c.-i. pipe and a small reservoir will be built.

CORONA, CAL.—The Rincon Water & Power Co. is reported as preparing plans for extending the works on the Santa Ana River.

LOMPOC, CAL.—W. W. Broughton, Pres. Town Council, writes us that the council is considering plans for works to cost $30,000 and an electric plant to cost $10,000. The water supply will be secured from wells. J. K. Harrington, Des. Engr., Santa Barbara, Cal.

SAN JOSE, CAL.—The San Jose Water Co. proposes to extend the works at a cost of about $100,000.

WINTERS, CAL.—This place voted June 8 on the question of issuing $17,000 of 6% bonds for works. H. V. Walsh, Clk.

SALT LAKE, UTAH.—City Engineer L. C. Kelsey has been instructed to prepare estimates of cost of utilizing water from flowing wells southeast of Liberty Park, which will increase daily city supply by 5,000,000 gallons, if it could be pumped into the works. It is thought this could be done for less than $40,000.

HULL, QUE.—Bids are asked until June 25 for furnishing and installing two sets of duplex, double-acting power pumps of 3,000,000 gallons capacity; also turbines, etc., as stated in our advertising columns. R. W. Farley, Cy. Engr.

ROSSLAND, B. C.—Bids are asked until July 9 for the purchase of $85,000 of 5% 25-year bonds for extending the works, and $25,000 for a fire hall. C. O. Lalonde, Mayor.

## SEWERAGE.

AUBURN, ME.—It is proposed to build sewers for Auburn Heights. Address Mayor Wilson.

BIDDEFORD, ME.—The council has appropriated $4,000 for extending Mill Brook sewer, $4,500 for paving, $1,675 for bridge work, etc.

KINGFIELD, ME.—It is proposed to build a sewerage system.

RANDOLPH, ME.—This place will vote June 13 on the question of appropriating $2,000 additional for sewers.

BOSTON, MASS.—Bids are asked until June 27 for building parts of section 60 of the North Metropolitan Sewerage system in Melrose, as described in our advertising columns. Wm. V. Davenport, Secy., Pemberton Bldg.

CHICOPEE, MASS.—Bids are asked until 2 p. m. June 15 for constructing a 5-ft. brick sewer. J. H. Loomis, Mayor.

FITCHBURG, MASS.—Freeman C. Coffin, of Boston, has submitted a report for the sewerage system, and has recommended a sewage disposal plant to cover 40 acres of land, a main trunk sewer, four connecting trunk sewers, separating storm water sewer, etc.; estimated cost—about $445,000, or without the storm water sewer, $300,000. Address Mayor Babbitt and Alderman Holman.

NEW BEDFORD, MASS.—The question of extending the system in Clarks Cove, to cost about $35,000, is being considered. Address Alderman Hodge, Chn. Com., and City Engineer Williams.

PITTSFIELD, MASS.—Newell & Snowling, of Uxford, Mass., have been awarded the contract at about $19,000 for sewer work outside of the work recently let to the Troy Public Works Co., Utica, N. Y.——Bids are wanted until June 25 for a 2,000,000-gallon sewage pumping plant, as stated in our advertising columns. J. L. Bacon, Chn Bd. Pub. Wks.——The following are the bids received May 28 for the reservoirs, sewers, screen house, etc., in connection with the new sewage disposal works: Troy Public Work Co., $58,340 (accepted); J. Vaughn, Stamford, N. Y., $54,940; Dodge & Devanny, Pittsfield, $62,392; Maloney & Peterson, Springfield, $55,362; Bisch & Flynn, Troy, $63,234; Geo. M. Atkins, $57,307; C. H. Eglee & Co. Boston, $64,632; Moulton & Maloney, Boston, $58,883; Daniel O'Connell & Son, Holyoke, $61,385; T. L. Allen, Worcester, $69,640.

BRIDGEPORT, CONN.—Bids are asked until June 19 for constructing 1,325 ft. of 30-in. brick sewer, as stated in our advertising columns. H. G. Scofield, Cy. Surv; C. E. Williams, Dir. Pub. Wks.

BROOKLYN, N. Y.—Bids are asked by the department of sewers, 21 Park Row, Manhattan, until June 19 for constructing about 3,200 ft. of 40 to 30-in. brick and about 28,000 ft. of 24 to 12-in. pipe sewers, etc., in several streets in Brooklyn.——The Borough Construction Co. has submitted the lowest bid at $773,227 for the 10th Ave. sewer in Brooklyn.

DEPEW, N. Y.—Bids are asked until June 17 for constructing sewers in several streets. J. C. Glade, Village Clk.

ELMIRA, N. Y.—The board of public works has asked for bids for sewers in a number of streets.

KINGSTON, N.Y.—Bids are asked until June 25 for constructing a sewage disposal plant and sewers for the Second and Ninth Wards, as stated in our advertising columns. Plans and specifications may be seen at the office of Engineering News, 220 Broadway, New York. G. N. Bell, Cy. Engr.; J. T. Cummings, Cy. Clk.

MOHAWK, N. Y.—The village trustees propose to build a system.

ONEIDA, N. Y.—A. E. Loomis is reported as preparing plans for a trunk and lateral sewers for the north side.

SCHENECTADY, N. Y.—Bids are asked until June 18 for the purchase of $66,000 of 4% sewer bonds. J. H. Bernard, Cy. Treas.

MOORESTOWN, N. J.—Bids are asked until June 21 for building 10 miles of 15 to 8-in. pipe sewers and a sewage disposal plant, as stated in our advertising columns. Alex. Potter, Consult. Engr., 150 Nassau St., New York; Arthur Collins, Chn. Com.

PASSAIC, N. J.—The state sewerage commission has appointed Wm. Ferguson, of Paterson; C. R. Wise, Cy. Engr., of Passaic; R. M. Watson, Borough Engr., of Rutherford, and Ernest Adam, Cy. Engr., of Newark, to report on the matter of building a joint trunk sewer to the Hackensack River. The engineers are to report for their respective cities by Sept. 15.

CHESTER, PA.—The council has voted to build a sewer in Caldwell St. D. W. Jefferis, Mayor.

WILKES BARRE, PA.—The following bids were received May 31 for constructing a 7-ft. brick circultr sewer through Hazle and Ross Sts., from the crossing of the C. R. R. of N. J. to a point in the Susquehanna River: Peter Reiley, $68,994; Fred. Hendler, $49,359; D. M. Rosser, $106,349; Jos. Hendler & Co., $70,619; Gibbons & Co., $82,456; with brick bottom; Gibbons & Co., $99,297; Jos. Hendler & Co., $76,791.

BALTIMORE, MD.—Boston Fear has been granted a permit to build a sewer to carry the sewage, etc., from 25 houses in Walbrook to Gwynns' Falls. Bids were received June 12 for sewers in Canton and other streets. B. T. Fendall, Cy. Engr.

DOTHAN, ALA.—Bids are asked until June 20 for furnishing the materials and for constructing five miles of 15 to 8-in. pipe sewers. H. A. Pearce, Mayor.

ASHLAND, O.—L. E. Chapin, of Canton, O., has been engaged to prepare plans for a system to cost about $50,000.

CLEVELAND, O.—Bids are asked until July 2 for constructing about 1,750 ft. of 13-ft. 6-in. main intercepting sewer, as stated in our advertising columns. The first section of this sewer will cost about $50,000, and the entire sewer about $2,500,000. The sewer will extend across the city to the lake at Collinwood. C. P. Salen, Dir. Pub. Wks.

COLUMBUS, O.—Rudolph Hering, 100 William St., New York, has submitted a report on the proposed new system, to cost about $2,000,000.

SOUTH BROOKLYN, O.—Bids are asked until June 29 for a sewage disposal plant. F. L. Krause, Engr., Society for Savings Bldg., Cleveland, O.; W. T. Pupikofer, Clk.

YOUNGSTOWN, O.—Bids are asked until June 22 for constructing a sewer in three streets. C. E. Cross, Clk.

WABASH, IND.—Bids are asked until June 24 for a local sewer. Fremont McLees, Cy. Clk.

PEORIA, ILL.—H. E. Beasley, Cy. Engr., writes us that plans for sewers and pavements are under consideration.

OSHKOSH, WIS.—Geo. Randall, Cy. Engr., has submitted a report urging the construction of three new sewers to cost about $19,000.

DES MOINES, IA.—It is proposed to build a system for Highland Park, to include 48 and 36-in. brick and a 12-in. pipe sewer. Address Alderman Dorr.

ST. PAUL, MINN.—Bids are asked until June 17 for 2,000 ft. of pipe sewers, etc. C. H. Bronson, Clk. Bd.

BOZEMAN, MONT.—Engineer Crookes is reported to have prepared plans for a system to cost $12,600.

GALVESTON, TEX.—Linus W. Brown, Engr. of the Orleans Levee Bd., New Orleans, La., is reported as making an investigation of the matter of building a system here.

PORTLAND, ORE.—Smyth & Howard have been awarded the contract at $54,382 for constructing the Beech St. sewer.

CHICO, CAL.—This place has voted to issue $45,000 in bonds for a system.

SACRAMENTO, CAL.—Rudolph Hering, New York, has submitted a report on the proposed system, and has recommended the construction of the combined system, with the outlet into the Sacramento River.

VISALIA, CAL.—Bids are asked by the city clerk until July 10 for the purchase of $60,000 of 30-year bonds for the proposed system.

## GARBAGE DISPOSAL—STREET CLEANING

NEW YORK, N. Y.—Bids are asked by the department of street cleaning, 21 Park Row, until June 27 for the final disposal of the garbage, waste, etc., for the Boroughs of the Bronx and Manhattan for five years from Aug. 1.

ORANGE, N. J.—The council has purchased a site for the proposed crematory, according to reports.

TRENTON, N. J.—Bids are asked until June 14 for the purchase of $50,000 of 20-year 3½% bonds for a crematory, and $65,000 for a free library and fire engine house. W. J. B. Stokes, Cy. Treas.

NEWPORT NEWS, VA.—The following bids for a garbage crematory were received June 10, (a) being for crematory with brick chimney, and (b) for crematory with iron stack: Dixon Crematory Co., Toledo, O., (a) $8,700.23, (b) $7,670.16; Bridgeport Boiler Works, Bridgeport, Conn., Smith Garbage Crematory, (a) $7,400, (b) $6,350; O'Reilly Bros., New York, Morse-Boulger Gargabe Destructor (39 Cortlandt St., N. Y.), (a) $7,400, (b) $7,000.

HAMILTON, O.—The board of control has purchased a site for the proposed crematory.

## STREETS AND ROADS.

BOSTON, MASS.—Harvard bridge is to be paved with prepared wooden blocks at a cost of about $40,000.

SOMERSET, MASS.—An appropriation of $6,000 has been made for building macadam roads.

SOMERVILLE, MASS.—An appropriation of $12,000 has been made for macadamizing the Powder House Boulevard in West Somerville.

WOONSOCKET, R. I.—An ordinance appropriating $40,450 for repairs in several streets was passed by the council at a recent meeting.

WOONSOCKET, R. I.—The council has appropriated $40,450 for improvements in several streets.

BINGHAMTON, N. Y.—The county supervisors have appropriated $2,500 for a stone crusher.

BROOKLYN, N. Y.—A plan is on foot to extend Grand St. to the plaza of the new East River bridge, at a cost of about $300,000.

BUFFALO, N. Y.—The following were the lowest bids received May 31 for repaving: Interstate Paving Co., in Exchange St., $25,000; in Dole St., $6,450; in Terrace St., $12,800; in Commercial St., $2,300; in Tupper St., $5,000; in Seventh St., $5,900. H. P. Burgard, in Lock St., $1,300; in Howell St., $2,000. Warner Quinlan Co., in Seventh St., $7,595.

GLENS FALLS, N. Y.—Bids are asked until June 17 for constructing about 9,000 yds. of brick paving, 6,000 yds. of asphalt, and 3,000 yds. of granite block, as stated in our advertising columns. Timothy I. Dillon, Clk.

SYRACUSE, N. Y.—The board of contract and supply made the following awards for paving on June 1: Asphalt—Warner-Quinlan Asphalt Co., Gifford St. $41,055, Lincoln Ave., $8,265; Empire Contracting Co., Harrison St. $3,115, Leavenworth Ave. $6,819, North Alvord St. $3,456, Walton St. $12,974; Barber Asphalt Paving Co., South Warren St. $1,101. Brick—F. J. Baker & Co., Canal St. $5,719, North West, Wallace and Mechanic Sts. $9,364, Pearl St. $8,706, West Belden Ave. $21,018, West Fayette St. $9,018, West Jefferson St. $19,455; Gleason-Kiely Contracting Co., Euclid Ave. $33,553.

ELIZABETH, N. J.—Bids are asked until June 15 for laying 7,630 sq. yds. block pavement on Magnolia Ave. N. K. Thompson, St. Comr.

JERSEY CITY, N. J.—Bids are asked until June 18 for improvements in Columbia Ave., requiring about 8,000 cu. yds. of excavation, 1,100 sq. yds. of Belgian pavement, 3,275 lin. ft. of curbstone, etc. Wm. A. Tolson, Cy. Clk.

NEWARK, N. J.—The street and water commissioners have recommended that several streets be paved with macadam.

WASHINGTON, N. J.—Bids are asked until June 29 for macadamizing about one mile of road. A. W. Cutler, Dir. Bd. of Freeholders.——Bids are asked until June 29 for macadamizing about 1¼ miles of road. C. E. Johnston, Mayor.

IRWIN, PA.—It was voted on June 6 to pave about five miles of streets, and also to lay sewers, at a total cost of about $100,000.

JOHNSTOWN, PA.—Bids are asked until June 17 for paving park sidewalk with rock, asphalt or cement. John Fulton, Pres. Park Comrs.

PHILADELPHIA, PA.—About 60 miles of roads are to be macadamized at a cost of about $600,000.

PITTSBURG, PA.—Bids are asked until June 15 for grading in Bellevue, requiring about 22,000 cu. yds. of excavation. F. H. & W. A. Bole, P. O. Box 1,587.

PITTSBURG, PA.—Bids are asked until June 18 for paving, curbing, laying sidewalks and sewer pipe in several streets. Geo. W. Wilson, Dir. Dept. Pub. Wks.

WILKESBARRE, PA.—An ordinance authorizing the paving of Scott St. with brick was recently passed by the selectmen.

PETERSBURG, VA.—Market St., this city, is to be paved with asphalt.

CLARKSVILLE, W. VA.—Bonds will be issued to the amount of $40,000 for street paving and sewerage purposes.

NEW MARTINSVILLE, W. VA.—The contract for paving was awarded to Collsworth Skidmore, of Parkersburg, on May 29, at $19,000.

ATLANTA, GA.—Whitehall St. is to be paved with asphalt, at a cost of about $34,500.

OWENSBORO, KY.—Bids are asked until June 15 for about 5,400 sq. yds. of macadam paving, including 25,000 ft. of cement curb and gutters. E. B. Shifly, Cy. Engr.

BOWLING GREEN, O.—Bids are asked until June 25 for constructing about 6½ miles of dirt road. B. C. Harding, County Audr.

CANTON, O.—Bids are asked until June 17 for the purchase of $55,000 street improvement bonds. C. C. Loyd, Cy. Clk.

GALLIPOLIS, O.—Bids are asked until June 20 for the purchase of $35,000 turnpike bonds. J. T. Hanson, County Audr.

MARION, O.—Bids are asked until June 22 for laying about 3,736 sq. yds. of macadam pavement. D. M. Odaffer, Cy. Clk.

NAPOLEON, O.—Bids are asked until June 15 for macadamizing roads in Damascus and Harrison townships. D. F. Coe, County Audr.

TOLEDO, O.—Bids are asked until June 24 for paving in Maumee Ave. J. E. Connell, Cy. Clk.

EAST CHICAGO, IND.—Bids are asked until June 24 for macadamizing and curbing Tod Ave. for a distance of about 2,900 ft. H. E. Jones, Cy. Clk.

PERU, IND.—Bids are wanted by the council until June 15 for paving Broadway with brick.

SOUTH BEND, IND.—Resolutions have been passed by the board of public works for improvements in several streets.

BAY CITY, MICH.—The board of public works has been directed to solicit bids for paving in Fourth Ave.——A resolution has been introduced ordering Center St. to be paved with brick.

GRAND RAPIDS, MICH.—Resolutions have been adopted by the council for paving several streets.

MANISTEE, MICH.—Bids are asked until June 29 for 1,200 yds. of brick paving, as stated in our advertising columns. W. H. Pfeiffer, Cy. Clk.

MOLINE, ILL.—Plans are on foot for paving 15th St. with asphalt or brick.

LACROSSE, WIS.—The following bids were received by the board of public works on June 3 for paving: E. S. Mead & Co., $34,590; T. E. Wooley & Co., $34,675; Durnell, Waukesha, $35,200; Heineman, Chicago, $36,150; Western Granite Co., $34,700.

MILWAUKEE, WIS.—Bids are asked until June 18 for curbing in several streets. John R. Wolf, Compt.

DULUTH, MINN.—The contract for paving Superior St with brick has been awarded to Waterworth & Fee, at $54,700.

MINNEAPOLIS, MINN.—The city council has voted to issue $150,000 street improvement bonds.

FORT LEAVENWORTH, KAN.—Bids are asked until June 17, for constructing roads, sidewalks, curbs, etc. D. E. McCarthy, Q. M.

KANSAS CITY, MO.—The city council has ordered bids advertised for paving Lexington and Electric Sts.

ST. JOSEPH, MO.—City Engineer Radcliffe has been instructed to draw up ordinances for the paving of King Hill Ave., with brick or asphalt.

ST. LOUIS, MO.—Bids are asked until June 18 for repaving in 21 streets and alleys with either brick or asphalt. Hiram Phillips, Pres. Bd. Pub. Improvements.

HOUSTON, TEX.—Bids are asked until June 20 for the purchase of $240,000 paving and $60,000 sewer bonds. J. D. Woolford, Mayor.

NORTH YAKIMA, WASH.—The contract for paving Yakima Ave. has been awarded to R. C. Burlingame, at $10,600.

SEATTLE, WASH.—Ordinances have been passed by the city council authorizing the paving of several streets with asphalt.

## CONTRACT PRICES.

SEWERAGE AND PAVING.—Havana, Cuba.—The following is the bid of Andrew Onderdonk, J. D. McClellan and M. J. Dady, of New York, the only bid submitted May 29 for constructing the sewerage system and paving the streets; the bid has been rejected:

Matadero Drainage.

| Quantities. | | Estimated cost + 25%. | Contractor's bid. | Estimated Cost. | Estimated Cost, + 50%. |
|---|---|---|---|---|---|
| 24" drain ..... | 300 ft. | $7.00 | $8.40 | $5.60 | $8.40 |
| 32" " ..... | 115 " | 14.25 | 14.10 | 11.40 | 17.10 |
| 34" " ..... | 300 " | 13.95 | 15.45 | 11.16 | 16.74 |
| 42" " ..... | 105 " | 16.40 | 19.80 | 13.12 | 19.68 |
| 46" " ..... | 90 " | 20.65 | 22.50 | 16.52 | 24.78 |
| 48" " ..... | 135 " | 20.65 | 24.00 | 16.52 | 24.78 |
| 50" " ..... | 245 " | 22.70 | 24.15 | 18.16 | 27.24 |
| 58" " ..... | 330 " | 27.40 | 30.35 | 21.92 | 32.88 |
| 70" " ..... | 180 " | 36.50 | 42.00 | 29.20 | 43.80 |
| 82" " ..... | 175 " | 45.60 | 52.00 | 36.48 | 54.72 |
| 84" " ..... | 130 " | 49.20 | 54.00 | 39.36 | 59.04 |
| 140" " ..... | 90 " | 125.30 | 120.00 | 150.24 | 150.36 |
| 16x10' drain ... | 270 " | 201.00 | 130.00 | 160.80 | 241.20 |
| 18x9½' " ... | 340 " | 243.30 | 155.00 | 194.64 | 291.96 |
| 20x9½' " ... | 825 " | 283.50 | 212.00 | 226.80 | 340.20 |
| Total ..... | | $431,998 | $329,233 | $345,598 | $518,398 |

South Matadero.

| | | | | | |
|---|---|---|---|---|---|
| Sec.1. 8" sewer. | 4,610 ft. | $5.20 | $7.15 | $4.16 | $6.24 |
| " 10" " | 580 " | 6.00 | 8.15 | 4.80 | 7.20 |
| " 12" " | 395 " | 7.65 | 8.85 | 6.12 | 9.18 |
| " 15" " | 330 " | 9.50 | 10.85 | 7.60 | 11.40 |
| " 32" " | 565 " | 21.30 | 30.30 | 17.04 | 25.56 |
| " 36" " | 495 " | 22.50 | 39.50 | 18.00 | 27.00 |
| Total ..... | | $56,781 | $81,437 | $45,427 | $68,136 |
| Sec.2. 8" sewer. | 3,610 ft. | $4.20 | $7.15 | $3.36 | $5.04 |
| " 10" " | 375 " | 5.55 | 8.15 | 4.44 | 6.66 |
| " 15" " | 220 " | 9.25 | 10.85 | 7.40 | 11.10 |
| " 18" " | 235 " | 9.50 | 13.15 | 7.60 | 11.40 |
| " 20" " | 230 " | 12.40 | 14.85 | 9.92 | 14.88 |
| " 24" " | 175 " | 15.70 | 19.00 | 12.56 | 18.84 |
| " 26" " | 50 " | 18.20 | 27.00 | 14.56 | 21.84 |
| Total ..... | | $28,020 | $42,436 | $22,416 | $33,624 |

Jesus del Monte.

| | | | | | |
|---|---|---|---|---|---|
| 8" sewer ..... | 7,905 ft. | $3.95 | $7.15 | $3.16 | $4.74 |
| 10" " ..... | 255 " | 4.55 | 8.15 | 3.64 | 5.46 |
| 12" " ..... | 340 " | 8.35 | 8.85 | 6.68 | 10.02 |
| 15" " ..... | 760 " | 6.75 | 10.85 | 5.40 | 8.10 |
| 24" " ..... | 105 " | 13.90 | 19.00 | 11.12 | 16.68 |
| 26" " ..... | 120 " | 15.20 | 27.00 | 12.16 | 18.24 |
| 34" " ..... | 120 " | 17.40 | 37.50 | 13.92 | 20.88 |
| 38" " ..... | 730 " | 19.90 | 73.80 | 15.92 | 23.88 |
| Total ..... | | $60,253 | $133,463 | $48,202 | $72,303 |

Cerro.

| | | | | | |
|---|---|---|---|---|---|
| Sec.1. 8" sewer. | 3,316 ft. | $3.55 | $7.15 | $2.84 | $4.26 |
| " 50" " | 899 " | 30.30 | 94.00 | 24.24 | 36.36 |
| " 52" " | 299 " | 28.20 | 95.00 | 22.56 | 33.84 |
| Total ..... | | $47,443 | $136,620 | $37,955 | $56,932 |
| Sec.2. 8" sewer. | 5,968 ft. | $3.45 | $7.15 | $2.76 | $4.14 |
| " 10" " | 259 " | 4.70 | 8.15 | 3.76 | 5.64 |
| " 28" " | 780 " | 17.65 | 29.00 | 14.12 | 21.18 |
| " 52" " | 505 " | 31.50 | 95.00 | 25.20 | 37.80 |
| " 54" " | 90 " | 37.60 | 96.40 | 30.08 | 45.12 |
| " 62" " | 105 " | 39.00 | 120.00 | 31.20 | 46.80 |
| Total ..... | | $58,960 | $136,622 | $47,168 | $70,752 |
| Sec.3. 8" sewer. | 4,435 ft. | $4.50 | $7.15 | $3.60 | $5.40 |
| " 10" " | 285 " | 5.55 | 8.15 | 4.44 | 6.66 |
| " 12" " | 440 " | 6.10 | 8.85 | 4.88 | 7.32 |
| " 15" " | 535 " | 8.50 | 10.85 | 6.80 | 10.20 |
| " 18" " | 535 " | 10.10 | 13.15 | 8.08 | 12.12 |
| Total ..... | | $34,174 | $50,767 | $27,339 | $41,009 |
| Sec.4. 8" sewer. | 4,040 ft. | $3.55 | $7.15 | $2.84 | $4.26 |
| " 10" " | 240 " | 4.35 | 8.15 | 3.48 | 5.22 |
| " 12" " | 260 " | 5.45 | 8.85 | 4.36 | 6.54 |
| " 15" " | 215 " | 7.75 | 10.85 | 6.20 | 9.30 |
| Total ..... | | $18,469 | $35,476 | $14,775 | $22,163 |
| Sec.5. 8" sewer. | 1,695 ft. | $3.55 | $7.15 | $2.84 | $4.26 |
| " 10" " | 75 " | 4.20 | 8.15 | 3.36 | 5.04 |
| " 12" " | 75 " | 4.75 | 8.85 | 3.80 | 5.70 |
| " 15" " | 550 " | 7.40 | 10.85 | 5.92 | 8.88 |
| " 18" " | 730 " | 8.65 | 13.15 | 6.92 | 10.38 |
| " 20" " | 110 " | 9.05 | 14.85 | 7.24 | 10.86 |
| Total ..... | | $18,069 | $30,595 | $14,455 | $21,682 |

Vedado.

| | | | | | |
|---|---|---|---|---|---|
| Sec.1. 8" sewer. | 5,000 ft. | $10.05 | $8.04 | $7.40 | $12.06 |
| " 26" " | 475 " | 23.90 | 33.45 | 19.12 | 28.68 |
| " 28" " | 860 " | 22.60 | 30.75 | 18.08 | 27.12 |
| " 44" " | 630 " | 31.00 | 70.00 | 24.80 | 37.20 |
| " 54" " | 350 " | 36.70 | 83.00 | 29.36 | 44.04 |
| " 56" " | 530 " | 41.00 | 98.00 | 32.80 | 49.20 |
| Total ..... | | $135,144 | $203,174 | $108,115 | $162,172 |
| Sec.2. 8" sewer. | 9,000 ft. | $10.00 | $10.50 | $8.00 | $12.00 |
| " 18" " | 1,440 " | 19.50 | 16.50 | 15.60 | 23.40 |
| " 20" " | 750 " | 17.30 | 18.15 | 13.84 | 20.76 |
| " 26" " | 710 " | 25.20 | 33.45 | 20.16 | 30.24 |
| " 28" " | 240 " | 30.65 | 54.00 | 24.52 | 36.78 |
| " 32" " | 600 " | 26.75 | 30.30 | 21.40 | 32.10 |
| " 36" " | 650 " | 34.90 | 57.00 | 27.92 | 41.88 |
| Total ..... | | $195,038 | $220,660 | $156,030 | $234,046 |

East Side Marginal.

| | | | | | |
|---|---|---|---|---|---|
| Sec.1. 8" sewer. | 4,381 ft. | $6.20 | $7.15 | $4.96 | $7.44 |
| " 10" " | 752 " | 9.40 | 8.15 | 7.52 | 11.28 |
| " 12" " | 55 " | 13.20 | 8.85 | 10.56 | 15.84 |
| " 48" " | 497 " | 46.40 | 65.00 | 37.12 | 55.68 |
| " 54" " | 131 " | 56.25 | 96.40 | 45.00 | 67.50 |
| " 18" drain. | 457 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 259 " | 4.10 | 7.60 | 3.28 | 4.92 |
| " 24" " | 689 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 28" " | 98 " | 8.65 | 10.30 | 6.92 | 10.38 |
| " 32" " | 506 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 34" " | 300 " | 12.90 | 15.45 | 10.32 | 15.48 |
| " 36" " | 73 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 38" " | 73 " | 16.70 | 17.15 | 13.36 | 20.04 |
| Total ..... | | $86,494 | $109,584 | $69,195 | $103,792 |
| Sec.2. 8" sewer. | 4,596 ft. | $5.60 | $7.15 | $4.48 | $6.72 |
| " 10" " | 790 " | 7.25 | 8.15 | 5.80 | 8.70 |
| " 12" " | 85 " | 6.60 | 8.85 | 5.28 | 7.92 |
| " 18" " | 80 " | 9.95 | 13.15 | 7.96 | 11.94 |
| " 20" " | 250 " | 11.45 | 14.90 | 9.16 | 13.74 |
| " 24" " | 164 " | 16.75 | 22.15 | 13.40 | 20.10 |
| " 12" drain. | 43 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 18" " | 549 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 219 " | 4.10 | 7.60 | 3.28 | 4.92 |
| " 24" " | 567 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 97 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 30" " | 792 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 36" " | 165 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 40" " | 165 " | 15.30 | 18.90 | 12.24 | 18.36 |
| " 44" " | 152 " | 19.75 | 20.70 | 15.80 | 23.70 |
| " 50" " | 158 " | 20.90 | 24.15 | 16.72 | 25.08 |
| Total ..... | | $64,380 | $80,775 | $51,504 | $77,255 |
| Sec.3. 8" sewer. | 3,944 ft. | $4.75 | $7.15 | $3.80 | $5.70 |
| " 10" " | 370 " | 6.75 | 8.15 | 5.40 | 8.10 |
| " 12" " | 291 " | 6.95 | 8.85 | 5.56 | 8.34 |
| " 15" " | 443 " | 8.10 | 10.85 | 6.48 | 9.72 |
| " 12" drain. | 372 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 317 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 296 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 512 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 216 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 271 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 95 " | 8.65 | 10.35 | 6.92 | 10.38 |
| Total ..... | | $35,934 | $52,177 | $28,747 | $43,121 |
| Sec.4. 8" sewer. | 3,542 ft. | $4.65 | $7.15 | $3.72 | $5.58 |
| " 10" " | 436 " | 6.25 | 8.20 | 5.00 | 7.50 |
| " 12" " | 95 " | 7.20 | 8.85 | 5.76 | 8.64 |
| " 15" " | 345 " | 8.00 | 10.85 | 6.40 | 9.60 |
| " 12" drain. | 555 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 295 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 270 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 120 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 240 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 90 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 30" " | 355 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 36" " | 215 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 38" " | 525 " | 15.30 | 17.15 | 12.24 | 18.36 |
| " 42" " | 75 " | 17.65 | 19.80 | 14.12 | 21.18 |
| Total ..... | | $43,804 | $59,771 | $35,043 | $52,564 |
| Sec.5. 8" sewer. | 4,770 ft. | $4.50 | $7.15 | $3.60 | $5.40 |
| " 10" " | 190 " | 6.25 | 8.20 | 5.00 | 7.50 |
| " 12" " | 70 " | 6.50 | 8.85 | 5.20 | 7.80 |
| " 18" " | 530 " | 9.35 | 13.15 | 7.48 | 11.22 |
| " 20" " | 565 " | 10.40 | 14.85 | 8.32 | 12.48 |
| " 12" drain. | 220 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 400 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 230 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 510 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 225 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 28" " | 235 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 32" " | 335 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 42" " | 300 " | 17.60 | 19.80 | 14.08 | 21.12 |
| " 44" " | 60 " | 19.30 | 20.70 | 15.44 | 23.16 |
| Total ..... | | $52,293 | $75,607 | $41,834 | $62,751 |
| Sec.6. 8" sewer. | 4,345 ft. | $4.40 | $7.15 | $3.52 | $5.28 |
| " 10" " | 380 " | 6.55 | 8.15 | 5.24 | 7.86 |
| " 12" " | 450 " | 8.30 | 8.85 | 6.60 | 9.96 |
| " 15" " | 420 " | 8.20 | 10.85 | 6.56 | 9.84 |
| " 28" " | 135 " | 16.80 | 28.05 | 13.44 | 20.16 |
| " 32" " | 325 " | 17.70 | 30.30 | 14.16 | 21.24 |
| " 34" " | 45 " | 26.80 | 37.50 | 21.44 | 32.16 |
| " 12" drain. | 50 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 385 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 210 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 105 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 185 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 95 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 95 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 30" " | 110 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 34" " | 385 " | 12.90 | 15.45 | 10.32 | 15.48 |
| " 36" " | 170 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 38" " | 155 " | 15.00 | 17.15 | 12.00 | 18.00 |
| " 40" " | 165 " | 16.40 | 18.90 | 13.12 | 19.68 |
| " 42" " | 105 " | 17.30 | 19.80 | 13.84 | 20.76 |
| " 56" " | 55 " | 23.60 | 29.45 | 18.88 | 28.32 |
| Total ..... | | $59,585 | $84,786 | $47,668 | $71,502 |
| Sec.7. 8" sewer. | 3,545 ft. | $5.75 | $7.15 | $4.60 | $6.90 |
| " 12" " | 195 " | 8.05 | 8.85 | 6.44 | 9.66 |
| " 38" " | 125 " | 24.25 | 40.35 | 19.40 | 29.10 |
| " 40" " | 535 " | 25.95 | 49.70 | 20.76 | 31.14 |
| " 44" " | 68 " | 31.50 | 52.50 | 25.20 | 37.80 |
| " 46" " | 127 " | 32.60 | 58.55 | 26.08 | 39.12 |
| " 12" drain. | 60 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 90 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 250 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 185 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 325 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 28" " | 100 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 30" " | 70 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 32" " | 80 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 36" " | 75 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 50" " | 30 " | ..... | 24.05 | ..... | ..... |
| " 56" " | 115 " | 38.40 | 29.45 | 30.72 | 46.08 |
| " 58" " | 160 " | 30.00 | 30.40 | 24.00 | 36.00 |
| " 62" " | 190 " | 35.80 | 35.35 | 28.64 | 42.96 |
| " 64" " | 365 " | 40.70 | 36.30 | 32.56 | 48.84 |
| Total ..... | | $81,591 | $106,939 | $65,273 | $97,909 |

North Side Marginal.

| Quantities. | | Estimated cost + 25%. | Contractor's bid. | Estimated Cost. | Estimated Cost, + 50%. |
|---|---|---|---|---|---|
| Sec.1. 8" sewer. | 6,830 ft. | $5.90 | $7.15 | $4.72 | $7.08 |
| " 10" " | 1,245 " | 6.60 | 8.15 | 5.28 | 7.92 |
| " 12" " | 245 " | 8.50 | 8.85 | 6.80 | 10.20 |
| " 15" " | 215 " | 8.15 | 10.85 | 6.52 | 9.78 |
| " 82" " | 455 " | 81.20 | 123.00 | 64.96 | 97.44 |
| " 84" " | 295 " | 94.00 | 175.00 | 75.20 | 112.80 |
| " 114" " | 120 " | 153.30 | 220.50 | 122.64 | 183.96 |
| " 12" drain. | 400 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 495 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 670 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 325 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 850 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 115 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 320 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 32" " | 105 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 38" " | 245 " | 17.35 | 17.15 | 13.88 | 20.82 |
| " 40" " | 115 " | 18.25 | 18.90 | 14.60 | 21.90 |
| " 50" " | 90 " | 21.60 | 24.15 | 17.28 | 25.92 |
| " 54" " | 70 " | 25.70 | 28.65 | 20.56 | 30.84 |
| " 56" " | 110 " | 30.00 | 29.45 | 24.00 | 36.00 |
| " 60" " | 150 " | 40.60 | 31.50 | 32.48 | 48.72 |
| Total ..... | | $171,584 | $239,224 | $137,267 | $205,900 |
| Sec.2. 8" sewer. | 6,445 ft. | $5.20 | $7.15 | $4.16 | $6.24 |
| " 10" " | 725 " | 6.85 | 8.15 | 5.48 | 8.22 |
| " 12" " | 110 " | 10.20 | 8.85 | 8.16 | 12.24 |
| " 15" " | 560 " | 13.10 | 10.85 | 10.48 | 15.72 |
| " 82" " | 340 " | 90.00 | 150.00 | 72.00 | 108.00 |
| " 12" drain. | 375 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 180 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 580 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 660 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 490 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 280 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 105 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 32" " | 80 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 34" " | 200 " | 12.90 | 15.45 | 10.32 | 15.48 |
| " 36" " | 115 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 38" " | 75 " | 15.35 | 17.15 | 12.28 | 18.42 |
| " 44" " | 90 " | 18.50 | 20.70 | 14.80 | 22.20 |
| " 46" " | 80 " | 20.15 | 22.50 | 16.12 | 24.18 |
| " 50" " | 55 " | 21.80 | 24.15 | 17.44 | 26.16 |
| " 56" " | 80 " | 30.50 | 29.45 | 24.40 | 36.60 |
| " 62" " | 75 " | 38.60 | 35.30 | 30.88 | 46.32 |
| " 66" " | 195 " | 38.60 | 37.15 | 30.88 | 46.32 |
| " 68" " | 95 " | 36.30 | 38.25 | 29.04 | 43.56 |
| " 78" " | 185 " | 53.20 | 47.00 | 42.56 | 63.84 |
| Total ..... | | $126,805 | $165,335 | $101,444 | $152,166 |
| Sec.3. 8" sewer. | 4,235 ft. | $4.95 | $7.15 | $3.96 | $5.94 |
| " 10" " | 900 " | 7.25 | 8.15 | 5.80 | 8.70 |
| " 12" " | 320 " | 12.15 | 8.85 | 9.72 | 14.58 |
| " 80" " | 215 " | 93.20 | 140.00 | 74.56 | 111.84 |
| " 82" " | 105 " | 81.30 | 150.00 | 65.04 | 97.56 |
| " 15" drain. | 75 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 775 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 140 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 610 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 75 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 30" " | 290 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 32" " | 175 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 40" " | 130 " | 15.40 | 18.90 | 12.32 | 18.48 |
| " 42" " | 75 " | 17.65 | 19.80 | 14.12 | 21.18 |
| " 50" " | 60 " | 27.65 | 24.15 | 22.12 | 33.18 |
| " 52" " | 115 " | 29.00 | 25.00 | 23.20 | 34.80 |
| Total ..... | | $81,300 | $112,213 | $65,040 | $97,560 |
| Sec.4. 8" sewer. | 6,045 ft. | $5.15 | $7.15 | $4.12 | $6.18 |
| " 10" " | 790 " | 7.15 | 8.15 | 5.72 | 8.58 |
| " 12" " | 560 " | 10.50 | 8.85 | 8.40 | 12.60 |
| " 15" " | 245 " | 11.10 | 10.85 | 8.88 | 13.32 |
| " 80" " | 400 " | 80.90 | 140.00 | 64.72 | 97.08 |
| " 12" drain. | 140 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 170 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 640 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 665 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 445 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 145 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 230 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 30" " | 230 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 34" " | 160 " | 12.90 | 15.45 | 10.32 | 15.48 |
| " 36" " | 160 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 40" " | 165 " | 16.95 | 18.90 | 13.56 | 20.34 |
| " 42" " | 80 " | 19.50 | 19.80 | 15.60 | 23.40 |
| " 44" " | 185 " | 22.00 | 20.70 | 17.60 | 26.40 |
| " 48" " | 110 " | 25.50 | 23.20 | 20.40 | 30.60 |
| Total ..... | | $107,208 | $149,626 | $85,766 | $128,649 |
| Sec.5. 8" sewer. | 6,400 ft. | $4.05 | $7.15 | $3.24 | $4.86 |
| " 10" " | 1,275 " | 5.25 | 8.15 | 4.20 | 6.30 |
| " 12" " | 110 " | 9.90 | 8.85 | 7.92 | 11.88 |
| " 15" " | 300 " | 8.70 | 10.85 | 6.96 | 10.44 |
| " 18" " | 130 " | 7.15 | 13.15 | 5.72 | 8.58 |
| " 78" " | 340 " | 70.15 | 136.00 | 56.12 | 84.18 |
| " 12" drain. | 75 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 525 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 595 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 430 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 165 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 30 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 30" " | 65 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 32" " | 115 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 34" " | 75 " | 12.90 | 15.45 | 10.32 | 15.48 |
| " 36" " | 340 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 42" " | 400 " | 18.55 | 19.80 | 14.84 | 22.26 |
| " 44" " | 300 " | 21.30 | 20.70 | 17.04 | 25.56 |
| " 54" " | 130 " | 25.20 | 28.65 | 20.16 | 30.24 |
| " 58" " | 45 " | 30.90 | 30.35 | 24.72 | 37.08 |
| " 60" " | 90 " | 30.70 | 31.50 | 24.56 | 36.84 |
| Total ..... | | $96,618 | $150,555 | $77,294 | $115,941 |
| Sec.6. 8" sewer. | 5,885 " | $3.45 | $7.15 | $2.76 | $4.14 |
| " 10" " | 1,135 " | 7.00 | 8.15 | 5.60 | 8.40 |
| " 12" " | 170 " | 5.15 | 8.85 | 4.12 | 6.18 |
| " 15" " | 700 " | 7.00 | 10.85 | 5.60 | 8.40 |
| " 18" " | 265 " | 9.90 | 13.15 | 7.92 | 11.88 |
| " 20" " | 85 " | 8.75 | 14.85 | 7.00 | 10.50 |
| " 58" " | 340 " | 47.50 | 118.00 | 38.00 | 57.00 |
| " 70" tun'l. | 700 " | 55.20 | 160.00 | 44.16 | 66.24 |
| " 74" " | 330 " | 75.60 | 130.00 | 60.48 | 90.72 |
| " 12" drain. | 395 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 560 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 575 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 340 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 380 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 825 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 345 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 30" " | 360 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 32" " | 160 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 36" " | 220 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " 42" " | 255 " | 17.65 | 19.80 | 14.12 | 21.18 |
| " 48" " | 115 " | 19.30 | 23.20 | 15.44 | 23.16 |
| Total ..... | | $149.722 | $301,965 | $119,778 | $179,666 |

South Side High Level.

| | | | | | |
|---|---|---|---|---|---|
| Sec.1. 8" sewer. | 5,295 ft. | $4.00 | $7.15 | $3.20 | $4.80 |
| " 10" " | 80 " | 4.75 | 8.15 | 3.80 | 5.70 |
| " 12" " | 80 " | 5.40 | 8.85 | 4.32 | 6.48 |
| " 18" " | 255 " | 8.70 | 13.15 | 6.96 | 10.44 |
| " 20" " | 80 " | 9.75 | 14.85 | 7.80 | 11.70 |
| " 24" " | 100 " | 14.30 | 19.00 | 11.44 | 17.16 |
| " 15" drain. | 250 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 310 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 410 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 170 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 565 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 190 " | 8.65 | 10.35 | 6.92 | 10.38 |
| Total ..... | | $37,087 | $60,481 | $29,669 | $44.504 |
| Sec.2. 8" sewer. | 4,075 ft. | $3.20 | $7.15 | $2.56 | $3.84 |
| " 10" " | 390 " | 4.35 | 8.15 | 3.48 | 5.22 |
| " 64" " | 590 " | 39.60 | 120.00 | 31.68 | 47.52 |
| " 12" drain. | 130 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 145 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 225 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 270 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 310 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 26" " | 365 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " 28" " | 190 " | 8.65 | 10.35 | 6.92 | 10.38 |
| Total ..... | | $47,276 | $115,575 | $37,821 | $56,732 |
| Sec.3. 8" sewer. | 4,050 ft. | $3.40 | $7.15 | $2.72 | $4.08 |
| " 10" " | 830 " | 4.25 | 8.15 | 3.40 | 5.10 |
| " 15" " | 310 " | 6.15 | 10.85 | 4.92 | 7.38 |
| " 24" " | 80 " | 12.60 | 19.00 | 10.08 | 15.12 |
| " 64" " | 255 " | 45.00 | 120.00 | 36.00 | 54.00 |
| " 66" " | 310 " | 38.75 | 122.00 | 31.00 | 46.50 |
| " 70" tun'l. | 365 " | 55.00 | 185.00 | 44.00 | 66.00 |
| " 70" " | 395 " | 40.60 | 123.00 | 32.48 | 48.72 |
| " 74" " | 435 " | 45.25 | 130.00 | 36.20 | 54.30 |
| " 12" drain. | 820 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 815 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 400 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " 20" " | 75 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " 24" " | 90 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " 28" " | 60 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " 30" " | 160 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " 32" " | 260 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " 34" " | 250 " | 12.90 | 15.45 | 10.32 | 15.48 |
| " 42" " | 80 " | 16.45 | 19.80 | 13.16 | 19.74 |
| " 44" " | 175 " | 19.15 | 20.70 | 15.32 | 22.98 |
| Total ..... | | $118,469 | $306,637 | $94,775 | $142,162 |

North Matadero

| | | | | | |
|---|---|---|---|---|---|
| Sec.1. 8" sewer. | 4,510 ft. | $4.65 | $7.15 | $3.72 | $5.58 |
| " 10" " | 245 " | 6.05 | 8.15 | 4.84 | 7.26 |
| " 12" " | 170 " | 7.40 | 8.85 | 5.92 | 8.88 |
| " 20" " | 145 " | 11.15 | 14.85 | 8.92 | 13.38 |
| " 24" " | 105 " | 13.10 | 19.00 | 10.48 | 15.72 |
| " 26" " | 345 " | 16.25 | 27.00 | 13.00 | 19.50 |
| " 12" drain. | 420 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " 15" " | 430 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " 18" " | 325 " | 3.45 | 6.15 | 2.76 | 4.14 |

Havana Sewerage Bid.

| | | | | | | |
|---|---|---|---|---|---|---|
| " | 20" | " | 205 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " | 24" | " | 520 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " | 28" | " | 150 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " | 30" | " | 400 " | 9.20 | 11.00 | 7.36 | 11.04 |
| " | 50" | " | 105 " | 20.10 | 24.15 | 16.08 | 24.12 |
| " | 52" | " | 75 " | 22.10 | 25.00 | 17.68 | 26.52 |
| | Total | | | $48,596 | $70,661 | $38,876 | $58,315 |
| Sec 2. | 8" | sewer. | 5,415 ft. | $4.45 | $7.15 | $3.56 | $5.34 |
| " | 10" | " | 135 " | 6.00 | 8.15 | 4.80 | 7.20 |
| " | 12" | " | 285 " | 6.10 | 8.85 | 4.88 | 7.32 |
| " | 15" | " | 290 " | 8.75 | 10.85 | 7.00 | 10.50 |
| " | 24" | " | 130 " | 14.25 | 19.00 | 11.40 | 17.10 |
| " | 26" | " | 380 " | 18.90 | 27.00 | 15.12 | 22.68 |
| " | 12" | drain. | 80 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " | 15" | " | 410 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " | 18" | " | 130 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " | 20" | " | 885 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " | 24" | " | 545 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " | 28" | " | 205 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " | 32" | " | 295 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " | 36" | " | 70 " | 13.55 | 16.25 | 10.84 | 16.26 |
| " | 38" | " | 170 " | 15.05 | 17.15 | 12.04 | 18.06 |
| " | 40" | " | 35 " | 16.20 | 18.90 | 12.96 | 19.44 |
| " | 50" | " | 45 " | 20.70 | 24.15 | 16.56 | 24.84 |
| " | 58" | " | 130 " | 26.80 | 30.35 | 21.44 | 32.16 |
| " | 72" | " | 90 " | 38.30 | 45.00 | 30.64 | 45.96 |
| " | 80" | " | 80 " | 42.50 | 50.00 | 34.00 | 51.00 |
| " | 82" | " | 180 " | 44.00 | 52.00 | 35.20 | 52.80 |
| " | 84" | " | 60 " | 45.50 | 54.00 | 36.40 | 54.60 |
| | Total | | | $78,590 | $100,086 | $62,872 | $94,308 |
| Sec 3. | 8" | sewer. | 3,905 ft. | $4.45 | $7.15 | $3.56 | $5.34 |
| " | 10" | " | 145 " | 6.75 | 8.15 | 5.40 | 8.10 |
| " | 12" | " | 215 " | 7.85 | 8.85 | 6.28 | 9.42 |
| " | 26" | " | 90 " | 17.50 | 27.00 | 14.00 | 21.00 |
| " | 28" | " | 80 " | 18.75 | 28.05 | 15.00 | 22.50 |
| " | 30" | " | 160 " | 18.90 | 30.00 | 15.12 | 22.68 |
| " | 34" | " | 205 " | 20.10 | 37.50 | 16.08 | 24.12 |
| " | 12" | drain. | 50 " | 1.85 | 3.00 | 1.48 | 2.22 |
| " | 15" | " | 60 " | 2.70 | 4.40 | 2.16 | 3.24 |
| " | 18" | " | 80 " | 3.45 | 6.15 | 2.76 | 4.14 |
| " | 20" | " | 90 " | 4.10 | 7.65 | 3.28 | 4.92 |
| " | 24" | " | 245 " | 7.00 | 8.40 | 5.60 | 8.40 |
| " | 26" | " | 235 " | 7.80 | 9.35 | 6.24 | 9.36 |
| " | 28" | " | 245 " | 8.65 | 10.35 | 6.92 | 10.38 |
| " | 32" | " | 110 " | 11.75 | 14.10 | 9.40 | 14.10 |
| " | 38" | " | 530 " | 14.90 | 17.15 | 11.92 | 17.88 |
| " | 40" | " | 170 " | 16.30 | 18.90 | 13.04 | 19.56 |
| " | 42" | " | 145 " | 17.20 | 19.80 | 13.76 | 20.64 |
| " | 50" | " | 50 " | 21.00 | 24.15 | 16.80 | 25.20 |
| | Total | | | $52,335 | $74,484 | $41,868 | $62,801 |

| Quantities. | | |
|---|---|---|
| Manholes of first class | 23 | each... |
| " " second class | 712 | " ... |
| " " third class | 159 | " ... |
| " " fourth class | 531 | " ... |
| " " fifth class | 245 | " ... |
| " " sixth class | 10 | " ... |
| No. 1 R. I. | 1,400 | ..... |
| No. 2 R. I. | 1,000 | ..... |
| Cast iron in same | 260 | tons.... |
| 6-in. vit. pipe, house connectns for sewers | 130,500 | lin. ft.. |
| Cast-iron pipe for house connections. | 50,000 | " " |
| Ventilator pipe | 50,000 | " " |
| House connections for drains | 6,100 | " " |
| 10-in. inlet connections for drains | 12,000 | " " |
| 36-in. force main | 451 | " " |
| 20-in. " " | 310 | " " |
| 36-in. valves | 3 | each... |
| 20-in. valves | 2 | " ... |

| | Estimated cost + 25%. | Contractor's bid. | Estimated cost. | Estimated cost + 50%. |
|---|---|---|---|---|
| South Side Pumping Station | $55.70 | $60.00 | $44.56 | $66.84 |
| Vedado Pumping Station. | 83.00 | 90.00 | 66.40 | 99.60 |
| Vedado Sub-lift, 5th and B Sts. | 105.80 | 135.00 | 84.64 | 126.96 |
| Vedado Sub-lift, 7th and 16th Sts. | 140.50 | 135.00 | 112.40 | 168.60 |
| S. C., S. B., T. P. Sta., and outfall at La Punta | 163.20 | 185.00 | 130.56 | 195.84 |
| Siphon across harbor | 13.75 | 60.00 | 11.00 | 16.50 |
| El Morro Pumping Station | 17.75 | 21.00 | 14.20 | 21.30 |
| 7-ft. tunnel in outfalls | 15.50 | 24.00 | 12.40 | 18.60 |
| 7-ft. sewer in outfalls | 56.25 | 75.00 | 45.00 | 67.50 |
| Outfall well | 2.10 | 3.15 | 1.68 | 2.52 |
| Offshore outfall sewer | 2.50 | 3.60 | 2.00 | 3.00 |
| Extra earth excavation | 1.65 | 1.95 | 1.08 | 1.98 |
| Rock excavation | 1.45 | 2.55 | 1.16 | 1.74 |
| Rubble-stone masonry | 1.90 | 3.45 | 1.52 | 2.28 |
| Second-class concrete masonry | 43.75 | 47.00 | 35.00 | 52.50 |
| Extra haul | 22.00 | 20.00 | 17.60 | 26.40 |
| Excavation from old sewers | 750.00 | 750.00 | 600.00 | 900.00 |
| Extra haul of same | 250.00 | 375.00 | 200.00 | 300.00 |
| Timber in foundations | 60,000.00 | 169,102.00 | 48,000.00 | 72,000.00 |
| Furnishing piles and driving | 19,500.00 | 93,652.00 | 15,600.00 | 23,400.00 |
| Sheathing left in trench | 3,384.00 | 4,455.00 | 2,707.20 | 4,060.80 |
| Sheet piling left in trench | 2,674.00 | 3,630.00 | 2,139.20 | 3,208.80 |
| Total | 58,590.00 | 150,000.00 | 46,872.00 | 70,308.00 |
| | 136,187.50 | 285,000.00 | 108,950.00 | 163,425.00 |
| | 266,875.00 | 421,218.00 | 213,500.00 | 320,250.00 |
| | 109.00 | 205.00 | 87.20 | 130.80 |
| | 53.00 | 140.00 | 42.40 | 63.60 |
| | 1,312.50 | 2,700.00 | 1,050.00 | 1,575.00 |
| | 56,688.00 | 32,520.00 | 45,350.40 | 68,025.60 |
| | .50 | 1.50 | .40 | .60 |
| | 3.25 | 3.25 | 2.60 | 3.90 |
| | 7.50 | 6.00 | 4.80 | 9.00 |
| | 10.30 | 11.00 | 8.24 | 12.36 |
| | .20 | .50 | .16 | .24 |
| | .50 | 1.75 | .40 | .60 |
| | .20 | .60 | .16 | .24 |
| | 31.25 | 45.00 | 25.00 | 37.50 |
| | 2.20 | 2.10 | 1.76 | 2.64 |
| | 31.25 | 45.00 | 25.00 | 37.50 |
| | 31.25 | 45.00 | 25.00 | 37.50 |
| | $1,772,096.05 | $2,747,389.00 | $1,417,676.84 | $2,126,515.26 |

| Quantities. | | |
|---|---|---|
| 6-in. vit. pipe, house connections for sewers | 130,500 | lin. ft.. |
| Cast-iron pipe for house connections. | 50,000 | " " |
| Ventilator pipe | 50,000 | " " |
| House connections for drains | 6,100 | " " |
| 10-in. inlet connections for drains | 12,000 | " " |
| 36-in. force main | 451 | " " |
| 20-in. " " | 310 | " " |
| 36-in. valves | 3 | each... |
| 20-in. valves | 2 | " ... |
| South Side Pumping Station | | |
| Vedado Pumping Station. | | |
| Vedado Sub-lift, 5th and B Sts. | | |
| Vedado Sub-lift, 7th and 16th Sts. | | |
| S. C., S. B., T. P. Sta., and outfall at La Punta | | |
| Siphon across harbor | | |
| El Morro Pumping Station | | |
| 7-ft. tunnel in outfalls | 400 | lin. ft.. |
| 7-ft. sewer in outfalls | 650 | " " |
| Outfall well | | |
| Offshore outfall sewer | | |
| Extra earth excavation | 20,000 | cu. yds. |
| Rock excavation | 8,000 | " " |
| Rubble-stone masonry | 10,000 | " " |
| Second-class concrete masonry | 10,000 | " " |
| Extra haul | 20,000 | " " |
| Excavation from old sewers | 20,000 | " " |
| Extra haul of same | 20,000 | " " |
| Timber in foundations | 600,000 | ft., B.M. |
| Furnishing piles and driving | 20,000 | lin. ft.. |
| Sheathing left in trench | 100,000 | ft., B.M. |
| Sheet piling left in trench | 50,000 | " " |
| Total | | |

Summary.

| | Estimated cost + 25%. | Contractor's bid. | Estimated cost. | Estimated cost + 50%. |
|---|---|---|---|---|
| East Side Marginal | $424,079.15 | $569,637.80 | $339,263.32 | $508,894.98 |
| North Side Marginal | 733,235.75 | 1,118,917.50 | 586,588.60 | 879,882.90 |
| South Side High-level | 202,831.25 | 482,693.25 | 162,265.00 | 243,397.50 |
| North Matadero | 179,520.25 | 254,232.00 | 143,616.20 | 215,424.30 |
| Matadero Drainage | 431,998.00 | 329,232.75 | 345,598.40 | 518,397.60 |
| South Matadero | 84,801.00 | 123,872.25 | 67,840.80 | 101,761.20 |
| Jesus del Monte | 60,252.50 | 133,463.00 | 48,202.00 | 72,303.00 |
| Cerro | 177,115.70 | 390,079.90 | 141,692.56 | 212,538.84 |
| Vedado | 330,181.50 | 423,835.75 | 264,145.20 | 396,217.80 |
| Manholes and connections | 789,397.55 | 1,053,362.00 | 631,518.04 | 947,277.06 |
| Pumping stations and accessories | 683,261.00 | 1,335,277.00 | 546,608.80 | 819,913.20 |
| Extra work | 299,437.50 | 358,750.00 | 239,550.00 | 359,325.00 |
| Total for sewers | $4,396,111.15 | $6,573,353.20 | $3,516,888.92 | $5,275,333.38 |
| Total for street paving | 5,701,869.55 | 7,144,899.66 | 4,561,495.64 | 6,386,093.89 |
| Grand total for both | $10,097,980.70 | $13,718,252.86 | $8,078,384.56 | $11,661,427.27 |

Note.—40% added to street paving in place of 50%.

DIKES.—Savannah, River, Ga.—Capt. Cassius E. Gillette, U. S. Engr., Savannah, received the following bids June 3, 1901, for constructing training dikes in the Savannah River, near Augusta, Ga.; (1) Hunter & Frey, Memphis, Tenn. (accepted); (2) Robt A. Cummings, Owensboro, Ky.; (3) Albert J. Turggs, Augusta:

| | 1. | 2. | 3. |
|---|---|---|---|
| Piling .....250,000 lin. ft.. | $0.045 | $0.06 | $0.05 |
| Pile driving ...180,000 " " | .08 | .15 | .05 |
| Wal'g pieces, &c 175,000 ft., B.M. | 24.00 | 25.00 | 25.00 |
| Wire spikes ... 17,000 lbs..... | .05 | .06 | .10 |
| Iron wire ..... 2,000 " .... | .05 | .10 | .10 |
| Brush (bundles) 50,000 cu. yds. | .48 | .60 | .60 |
| Mattress weav'g 2,000 " " | .75 | .25 | .40 |
| Rip-rap stone.. 17,000 " " | 2.10 | 3.00 | 2.25 |
| Total | $92,000 | $129,095 | $96,825 |

LEAD.—Allentown, Pa.—The following bids were received by the water commissioners, June 3, 1901, for furnishing 400 lbs. of lead: C. Y. Schelly & Bro., $4.92; W. H. Taylor & Co., $4.74½; M. S. Young & Co., $4.65 per 100 lbs.

TRUNK SEWER.—Brooklyn, N. Y.—The following bids were received June 5 for a trunk sewer in 10th Ave., 62d and 64th Sts., Brooklyn:

Bids Received at New York, N. Y., June 5, 1901, for a Trunk Sewer in the Borough of Brooklyn.

| Quantities. | | Thomas Wade, 273 Crescent St., Brooklyn. | Borough Con. Co., 189 Montague St., Brooklyn. | Farrell & Hopper, 215 W. 125th St., New York. | D. J. Creem, 307 Washington St., Brooklyn. | Norton, Kirk & Co., 215 W. 125th St., New York. | Cunningham & Kearns, 307 E. 86th St., New York. |
|---|---|---|---|---|---|---|---|
| 180-in. brick sewer, Section A... | 964 lin. ft.. | $86.00 | $86.50 | $132.50 | $72.00 | $91.50 | $98.00 |
| 180-in. " " " B... | 263 " " | 57.00 | 61.50 | 91.00 | 48.80 | 75.00 | 76.00 |
| 180-in. " " " C... | 1,310 " " | 47.00 | 54.50 | 76.00 | 44.20 | 61.00 | 69.50 |
| 180-in. " " " D... | 2,455 " " | 78.00 | 76.00 | 99.00 | 86.75 | 62.50 | 100.00 |
| 168-in. " " " E... | 3,300 " " | 72.00 | 71.90 | 92.00 | 86.75 | 56.50 | 99.00 |
| 162-in. " " " F... | 64 " " | 66.00 | 69.00 | 86.00 | 86.00 | 55.00 | 92.00 |
| 54-in. " " ..... | 1,405 " " | 5.40 | 6.80 | 7.00 | 4.00 | 5.80 | 4.30 |
| 48-in. " " ..... | 780 " " | 5.00 | 4.00 | 6.60 | 4.00 | 5.40 | 4.00 |
| 48-in. " " ..... | 40 " " | 7.50 | 7.00 | 10.00 | 8.00 | 8.20 | 6.60 |
| 42-in. " " ..... | 55 " " | 5.00 | 3.90 | 6.00 | 5.00 | 5.00 | 4.00 |
| 36-in. " " ..... | 1,080 " " | 4.50 | 6.65 | 6.30 | 4.50 | 4.80 | 4.00 |
| 30-in. " " ..... | 275 " " | 3.00 | 2.60 | 6.00 | 4.00 | 4.55 | 3.37 |
| 24-in. vitrified pipe sewer..... | 365 " " | 2.00 | 2.70 | 6.00 | 3.00 | 3.25 | 2.44 |
| 18-in. " " " ..... | 725 " " | 1.50 | 1.70 | 4.50 | 2.00 | 2.50 | 1.23 |
| 15-in. " " " ..... | 240 " " | 1.20 | 1.40 | 4.00 | 1.50 | 2.00 | 1.66 |
| 12-in. " " " ..... | 3,620 " " | 1.15 | 1.00 | 3.50 | 1.00 | 1.80 | .75 |
| 12-in. " " " ..... | 7,400 " " | 1.25 | .43 | 2.00 | .50 | 1.40 | .75 |
| Connecting chamber, complete | | 8300.00 | 15,000.00 | 17,500.00 | 10,000.00 | 14,000.00 | 14,000.00 |
| Manholes, Class A | 9 each... | 760.00 | 730.00 | 2,525.00 | 500.00 | 1,400.00 | 700.00 |
| " " B | 38 " ... | 67.00 | 54.00 | 85.00 | 30.00 | 50.00 | 50.00 |
| " " B | 54 " ... | 40.00 | 34.00 | 50.00 | 25.00 | 45.00 | 30.00 |
| Receiving basins | 39 " ... | 85.00 | 96.50 | 100.00 | 90.00 | 90.00 | 75.00 |
| Rosendale cem't concrete mas'ry. | 3,900 cu. yds. | 4.30 | .10 | 11.50 | .01 | 6.00 | 4.00 |
| Brick masonry | 7,800 " " | 8.50 | .10 | 13.50 | .01 | 9.50 | 7.00 |
| Foundation planking | 650 M. ft... | 26.00 | 16.35 | 35.00 | 20.00 | 25.00 | 14.00 |
| Yellow pine foundation planking. | 500 " " | 57.00 | 50.50 | 35.00 | 55.00 | 40.00 | 44.00 |
| Sheeting and bracing timber.... | 1,400 " " | 20.00 | 15.00 | 25.00 | 14.00 | 22.00 | 14.00 |
| 12 × 12-in. yellow pine piling.... | 710 " " | 48.00 | 40.40 | 45.00 | 55.00 | 50.00 | 40.00 |
| Piles | 125,000 lin. ft.. | .18 | .20 | .75 | .165 | .20 | .22 |
| Rip-rap | 3,200 cu. yds. | 1.90 | .57 | 1.00 | .50 | 1.25 | .50 |
| Sand filling | 5,600 " " | .30 | .15 | .80 | .10 | .60 | .50 |
| Total | | $870,024 | $773,290 | $1,270,257 | $812,997 | $837,853 | $997,041 |

DREDGING.—Oakland, Cal.—The following bids were received by Col. W. H. Heuer, U. S. Engr., San Francisco, for about 1,370,000 cu. yds. of dredging in Oakland tidal canal: West Coast Dredging Co., 20.89 cts. per. cu. yd.; Atlantic, Gulf & Pacific Co., 19.74 cts.; H. H. Burrell, 34 cts.; Golden Gate Dredging & Reclamation Co., 23.45 cts.

CEMENT.—Cincinnati, O.—The following bids for furnishing cement for the Chanoine dam, Dam No. 4, Ohio River, were received June 6, 1901, by R. R. Jones, Asst. Engr. for Maj. Wm. H. Bixby, U. S. Engr., (1) being for cement per bbl. in paper, and (2) per bbl. in wood, delivered at R. R. siding: Portland cement—Lawrence Cement Co., Philadelphia, Dragon, (1) $1.33, (2) $150; Atlas Portland Cement Co., New York, Atlas, (1) $1.33, (2) $1.55; D. J. Kennedy, Pittsburg, Lehigh, (1) $1.49, (2) $1.66; Empire Portland Cement Co., Warners, N. Y., Empire, (1) $1.68, (2) 1.83. Natural cement—Houston Bros., Pittsburg, Cumberland Valley, (1) 67 cts.; Cummings Cement Co., Pittsburg, Obelisk, (1) 73 cts.; Wm. Wirt Clark & Son, Baltimore, Md., Akron Star, (1) 77 cts., (2) 97 cts.; Lawrence Cement Co., Philadelphia, Improved Shield, (1) 79 cts., (2) 99 cts.

BRICK PAVING.—Duluth, Minn.—The following contract for 33,000 yds. of brick paving has been let to Watterworth & Fee, of Duluth: Removing old blocks, 4 cts. a sq. yd.; natural cement concrete, $4 a cu. yd.; curb reset, per ft., 16 cts.; sewer brick in place, $17 per M; brick outside of car tracks, $1.44 a sq. yd.; between car tracks, $1.63; sewer connections, 2.50 a ft.; water and gas service pipe, $2.25 a ft.; sewer, water and gas connections in same trench, $3.20; total, $54,708.

SEA WALL.—Fort Adams, R. I.—The following bids were received June 6, 1901, by Maj. G. W. Goethals, U. S. Engr., for repairing sea wall at Fort Adams, (1) being for masonry wall, a cu. yd., (2) for rip-rap, per ton of 2,000 lbs.: Wm. Beattie, Fall River, Mass., (1) $7.25, (2) $1.75; Alex. Booth, Newport, (1) $6.98, (2) $1.78; Chas. Smedley, New York, (1) 12.75, (2) $3; Frederick E. Shaw, Providence, (1) 8; (2) $2; Eugene S. Belden, Hartford, Conn., (1) $6.73, (2) $1.73; Estate of John Beattie, Leete Island, Conn., (1) $9.50, (2) $2.75.

DAM.—Ohio River, O.—The following bids were received June 4, by Maj. W. H. Bixby, U. S. Engr., for building 500 ft. of chanoine dam at dam No. 4, Ohio River; (1) Robt. A. Cummings, Owensboro, Ky., total bid $246,888; (2) The Evansville (Ind.) Contracting Co., $196,958; (3) Aetna Construction Co., Wheeling, W. Va., $179,572; (4) Sharpsburg Sand Co., Pittsburg, Pa., $219,191:

| | | 1. | 2. | 3. | 4. |
|---|---|---|---|---|---|
| Cofferdam ..... | 1,600 lin. ft.. | $20.00 | $15.00 | $15.00 | $27.50 |
| Round piling... | 8,340 " " | .40 | .50 | .30 | .60 |
| Sheet piling ... | 4,600 " " | .42 | .60 | .35 | .60 |
| Excavation. .... | 18,000 cu. yds. | .50 | .60 | .40 | .35 |
| Rock excavat'n. | 100 " " | 3.00 | 1.00 | 1.00 | 2.80 |
| Bolt holes ..... | 100 lin. ft.. | .50 | .50 | .50 | .70 |
| Stone filling ... | 6,000 cu. yds. | 2.04 | 3.00 | 2.50 | 3.85 |
| Gravel filling .. | 2,600 " " | 1.80 | .50 | .30 | .42 |
| Esplanade fill'g. | 12,000 " " | 1.20 | .65 | .35 | .42 |
| Concrete mas'ry | 7,000 " " | 5.00 | 4.50 | 3.50 | 3.50 |
| Oak timber .... | 400 M. ft... | 60.00 | 72.50 | 45.00 | 58.00 |
| Hemlock timber | 20 " " | 50.00 | 30.00 | 25.00 | 34.00 |
| Cast iron ..... | 220,000 lbs..... | .05 | .04¾ | .04 | .035 |
| Iron and steel. | 220,000 " ..... | .05 | .04¾ | .04 | .035 |
| Bolts, nuts, etc.. | 75,000 " ..... | .05 | .04¾ | .04 | .035 |
| 3-in. iron piping | 1,000 lin. ft.. | .60 | .60 | .50 | .70 |
| 4-in. iron piping | 500 " " | .84 | .75 | .50 | 1.00 |
| Channel dredging and bank protection. | | | | | |
| Chan'l dredg'g | 100,000 cu. yds. | .50 | .25 | .30 | .41 |
| Round piling .. | 16,000 lin. ft.. | .40 | .22 | .30 | .25 |
| Oak timber .... | 20 M. ft... | 60.00 | 40.00 | 45.00 | 44.00 |
| Bolts, nuts, etc. | 2,000 lbs..... | .05 | .05 | .04 | .03 |
| Stone filling .... | 12,000 cu. yds. | 2.04 | 1.00 | 2.00 | 1.50 |

LAYING WATER PIPE.—New London, Conn.—The following bids were received June 3, 1901, for laying 9,250 ft. of 20-in. pipe, 6,600 ft. 16-in. pipe, and 1,600 cu. yds. of extra filling in the enlargement of the city's water system: Seymour, Newell & Ehle, Springfield, Mass., 20-in., $1.18; 16-in., $1.12; filling, 45 cts.; total, $19,027; Taylor & Tylee, Worcester, 20-in., $1.12; 16-in., 68 cts.; filling, 40 cts.; total, $15,488; Kinney & Co., New York, 20-in., 99 cts.; 16-in., 97½ cts.; filling, $1.23; total, $16,811; M. Russo & Co., Boston, 20-in., $1; 16-in., 78 cts.; filling, 75 cts.; total, $15,598; F. E. Shaw, Providence, 20-in., 95 cts.; 16-in., 82 cts.; filling, 20 cts.; total, $14,520; Stone & Thurston, New York, 20-in., 94 cts.; 16-in., 68 cts.; filling, 40 cts.; total, $13,823; C. H. Eglee & Co., Boston, Mass., 20-in., 92 cts.; 16-in., 70 cts.; filling, 27 cts.; total, $13,562 (accepted); New London Construction Co., 20-in., $1.08; 16-in., 98 cts.; filling, 40 cts.; total, $17,098.

STREET SIGNS.—Holyoke, Mass.—Oscar C. Ferry, Clk. Bd. Pub. Wks., informs us that the following bids were received June 7, 1901, for furnishing 500 or more street signs: Mitenius & Lavalier, Holyoke, Mass., 40 cts., 33 cts. and 25 cts. f. o. b. Holyoke; Wayne Engineering & Construction Co., Fort Wayne, Ind., $7 for arc street lights set up, 40 cts. at factory; Metallic Guide Board Co., Springfield, Mass., 40 cts. f. o. b. Holyoke (accepted).

BRIDGE APPROACH.—Oswego, N. Y.—The department of works received the following bids May 27, 1901, for constructing the approach to the lower bridge; Contract A is for the new approach and Contract B the proposed improvements to the Hydraulic Canal Bridge; 368 sq. yds. of pavement will be necessary: Berlin Construction Co., Contract A—Iron work except foundation and sidewalks, $8,598; iron work under sidewalks, $4,360; for cylinders and foundations per lin. ft. of cylinders, $16.70; for roadway paving per sq. yd., $2.35; Contract B—Iron work except under sidewalk, $4,296; iron work under sidewalk, $1,998; paving roadway per sq. yd., $2.35. American Bridge Co., Contract A—Iron work under roadway, $98; per ft. for cylinders, $19.75; iron work under sidewalk, $49.85; pavement, per sq. yd., $2.50; Contract B—Iron work under roadway, $44.36; iron work under sidewalk, $21; pavement, $2.50. John Hendrick, steel work on Contract A, $10,645; cylinders, per ft., $18.60; steel work under sidewalk, $4,500; pavement, per sq. yd., $2.65; Contract B—Steel work under roadway, $4,690; steel work under sidewalk, $1,892; pavement, $2.65.

LEVEE WORK.—Duckport, La.—The following bids were received June 5, 1901, by J. T. McClellan, Pres. 5th Louisiana Levee Bd., for 110,000 yds. of levee construction work at Duckport: C. D. Leiper, Memphis, 12.24 cts.; H. F. Hodge, Natchez, 12.20 cts.; M. P. Erwin, Madison Ph., La., 10 cts. (accepted); J. K. Jefferies & Son, Bayou Sara, La., 13½ cts.; Donovan & Daley and H. F. Garbush, 10.18 cts.; Heigason Bros., Vicksburg, 10.70 cts.; M. J. Roach & Co., Memphis, 11.70 cts.; W. G. Scott, Memphis, 15.23 cts.; Robt. Nicholson, 11.94 cts.; W. P. Brown, Memphis, 10.98 cts.

FILTRATION PLANT, ETC.—Philadelphia, Pa.—The following bids were received by Wm. C. Haddock, Dir. Pub. Wks., May 28 for a filtered-water conduit from Torresdale Filter Plant to Frankford Pumping Station:

BIDS RECEIVED AT PHILADELPHIA, PA., MAY 28, 1901, FOR A WATER CONDUIT, RESERVOIR, ETC.
Bids for Filtered-Water Conduit, from Torresdale Filter Plant to Frankford Pumping Station.

| Quantities. | | E. D. Smith Co., 20th and Montgomery Ave. | D. J. McNichol, 613 Fidelity Bldg. | J. H. Louchheim, 1432 S. Penn Sq. | Ryan & Kelley, 8 South Broad St. | Michael O'Rourke, 2838 Frankford Ave. |
|---|---|---|---|---|---|---|
| Filtered-water conduit, complete | | $1,246,131 | $1,274,000 | $1,388,000 | $1,475,000 | $3,339,000 |
| Additional shaft excavation | 50 cu. yds. | 6.00 | 12.25 | 8.00 | 8.00 | 10.00 |
| " tunnel excavation | 100 " " | 6.50 | 5.95 | 6.50 | 7.00 | 10.00 |
| " brick masonry | 50 " " | 12.00 | 12.50 | 14.00 | 15.00 | 30.00 |
| " concrete | 50 " " | 6.50 | 8.00 | 7.00 | 10.00 | 15.00 |
| " steel | 2,000 lbs. | .10 | .09 | .07 | .10 | .20 |
| " cast iron | 2,000 " | .10 | .07 | .07 | .10 | .10 |
| " conduit | 10 lin. ft. | 100.00 | 96.00 | 90.00 | 125.00 | 200.00 |
| " depth of permanent shaft | 10 " " | 90.00 | 300.00 | 95.00 | 150.00 | 250.00 |
| " depth of working shaft | 10 " " | 90.00 | 105.00 | 70.00 | 125.00 | 250.00 |
| Total | | $1,251,206 | $1,281,563 | $1,392,930 | $1,481,750 | $3,350,350 |
| Time to complete | | 15 mos. | 9 mos. | 13 mos. | 24 mos. | 18 mos. |

Bids for Upper Belmont Reservoir and Water-Filter Plant.

| Quantities. | | Ryan & Kelley. | Daniel J. McNichol. |
|---|---|---|---|
| Reservoir complete | | $670,000 | $916,740 |
| Filter plant, complete | | 999,000 | 1,099,166 |
| Filtered-water basin, complete | | 260,000 | 229,013 |
| Additional: | | | |
| Excavation | 100 cu. yds. | 1.50 | 2.25 |
| Sodding | 100 sq. " | .50 | 2.00 |
| Granolithic pavem't. | 20 " " | 2.25 | 3.00 |
| 12-in. pipe, and less | 20 lin. ft. | .50 | 1.50 |
| C.-i. water pipe | 10 tons | 40.00 | 90.00 |
| Special castings | 5 " | 90.00 | 125.00 |
| Flange pipe & cstgs | 5 " | 140.00 | 125.00 |
| Wrought or cast iron and steel | 1,000 lbs. | .10 | .10 |
| Total | | $1,930,905 | $2,247,684 |
| Time to complete | | 22 mos. | 10 mos. |

## MANUFACTURING PLANTS.

WORCESTER, MASS.—The spindle mill owned by A. A. Westcott & Son at Spindleville, two miles from Hopedale, was destroyed by fire on June 8, involving a loss of about $50,000.

GLASSPORT, PA.—The American Axe & Tool Co., of New York, has contracted for an extension of the plant at this place, which will bring the cost of the structure and machinery to $1,000,000.

GREENSBURG, PA.—Lewis D. Castle is said to have organized a company to make brass and iron fittings, valves, etc., capitalized at $100,000.

PITTSBURG, PA.—The Pittsburg Steel Co., with a capital stock of $2,500,000, will apply for a charter at Harrisburg on June 24. The new plant, which will manufacture steel hoops and bands and wire rods and nails, will be built at Monessen. It will cover about 40 acres of ground and employ 2,000 men. The company is also considering the erection of a bar mill and open hearth furnaces. Wallace H. Rowe, Pres.; Edwin Bindley, Vice-Pres. and Charles E. Beeson, Secy.——Heyl & Patterson machinists, have purchased the John P. Ober frontage of 100 ft. on Preble Ave., Allegheny, on which they will erect a new factory.

PITTSBURG, PA.—The contract for the erection of the steel structural buildings for the Carnegie Tube Co.'s plant has been let to Wm. B. Scaife & Sons. of Pittsburg, and the S. R. Smythe Co., contracting engineers, have been awarded the contract for the heating furnaces.

KNOXVILLE, TENN.—Local papers state that the Knoxville Iron Co. will erect a new steel plant in this city, to cost about $500,000. Work will be started at once. The plans will be designed by an engineer already selected by the company in Pittsburg. Surveys are being made of the grounds. The new works will employ about 1,150 men. T. I. Stephenson, Vice-Pres. and Gen. Mgr., states that the company will expend about $500,000 on rolling mills, and after these have been erected a like amount will be spent on the steel plant.

FINDLAY, O.—The Findlay Clay Pot Co. proposes to build a large plant near Pittsburg, according to reports. Chas. Christman, Secy., is said to be looking after a site.

MARION, O.—The Marion Steam Shovel Co. has purchased a site for a large boiler plant.

DETROIT, MICH.—B. H. Rothwell, Secy. Caseville Sugar Co., 528 Chamber of Commerce, informs us that sufficient capital is subscribed to insure success to the plan to build and operate a 600-ton per day sugar factory, to be completed by Oct. 1, 1902. The capital stock is $450,000. Tenders will be received at an early date.

CHICAGO, ILL.—John H. Wagner has let contracts for two factory structures for E. W. Blatchford at the southwest corner of Clinton and Fulton Sts., each to be seven stories in height, 34 x 47 and 42 x 105 ft., respectively, of steel and brick construction. The total cost will be about $90,000.——The Fort Wayne Foundry & Machine Co. is about to begin the construction of a large foundry at 43d and Wood Sts., to cost $40,000. The dimensions of the building will be 77 x 208 ft.

KALISPELL, MONT.—The Royal Milling Co. will erect a flouring mill and grain elevator here this summer, with a capacity of 150 barrels per day.

HANNIBAL, MO.—It is stated that the Atlas Portland Cement Co. will locate its western plant about 1½ miles from this city. The buildings will be of brick. It is estimated that the new works will cost $1,500,000, and that from 700 to 1,000 men will be employed. The plant will have a daily capacity of 100 carloads.

ST. LOUIS, MO.—Plans have been prepared for a new shoe factory for the La Prelle-Williams Shoe Co., to be located at Jefferson Ave. and Mullanphy St., and work will shortly be started on the new structure. The building will be 120 x 160, and six stories in height.

PORT ARTHUR, TEX.—It is stated that the J. M. Guffey Petroleum Co. will locate a petroleum refinery at this place, to cost about $500,000. Plans for stills with a total daily capacity of 10,000 bbls. have been sent to the Riter-Conley Mfg. Co. and the Petroleum Iron Works for estimates on the cost of the work. J. C. McDowell, Gen. Mgr., is arranging for the location of the refinery.

SALT LAKE CITY, UTAH.—The Colorado Fuel & Iron Co. is said to be figuring on coal properties with a view of putting up an extensive plant.——The United States Steel Corporation will build a $3,500,000 iron and steel plant in the Salt Lake valley or at Cedar City in the near future, according to reports.

VANCOUVER, B. C.—A. T. Garland, Secy. Kaslo Smelter, Ltd., has written Consul Dudley, Vancouver, as follows: "We have now the following concessions, etc., to turn over to capitalists, who will engage in the necessary work and fulfill the considerations satisfactorily to the present directors of the company: (1) Bonus from the city, $50,000; (2) exemption from municipal taxation for a term of ten years: (3) good site of 20 acres, with A1 harbor, on Kootenai Lake; (4) water rights, with abundance of fall, conveniently situated for power purposes. Coal and coke can be laid down cheaply at the smelter site. Wood and timber are most conveniently placed. Lime for fluxing is obtainable in inexhaustible quantities along the lake shore and can be loaded on barges at a nominal figure. Our engineer assures us that the supply of dry ores necessary for fluxing the lead ores of our district can be easily obtained. For shipping facilities, our location is admirable. We are in direct connection by steamers for an open-all-the-year-round water way, Kootenai Lake, with the two great transcontinental lines, the Canadian Pacific and the Great Northern. In arranging with capitalists, we would expect the present stockholders to be either recouped for the amount so far expended, or that they would hold their stocks in any company which would deal on our holdings. The present company is acting in the interest of the citizens of the town, who have subscribed for enough capital stock to meet preliminary expenses."

## MISCELLANEOUS CONTRACTS.

LEVEE.—Portage, Wis.—Repairs are to be made on the levee to the extent of $20,000.

DREDGING.—Milwaukee, Wis.—Plans are on foot for dredging the harbor channel.

TELEPHONE LINE.—Grand Rapids, Mich.—The Citizens Telephone Co. will build a line to Reeds.

WHARF.—Astoria, Ore.—A bulkhead is to be erected and the wharf repaired at the quarantine station.

LEVEE.—Greenville, Miss.—Bids are asked until June 20 for 1,500,000 cu. yds. of earthwork. H. L. Foote, Secy.

DREDGING.—Ithaca, N. Y.—Surveys are being made by the state engineers, preparatory to dredging the Cayuga Lake Inlet.

SHAFT SINKING.—St. Louis, Mo.—Bids are wanted for sinking one or two shafts at Pristers Park. Boehmer Coal Co., 105 North 8th St.

TELEPHONES.—Minneapolis, Minn.—The Twin City Telephone Co. has purchased a site and will erect a building and switchboard at a cost of about $70,000.

TELEPHONE LINE.—Aberdeen, S. D.—The Dakota Central Telephone Co. is arranging to construct a line from Doland to Hecla, and put in an exchange at Hecla.

SUCTION FRAME.—St. Louis, Mo.—Bids are asked until June 19 for a suction frame for a hydraulic dredge at Memphis, Tenn. Capt. Mason M. Patrick, U. S. Engrs.

LIGHTHOUSES.—St. Joseph Point, Fla.—Bids are asked until June 17 for constructing a lighthouse and range beacon. Lieut.-Col. A. N. Damrell, U. S. Engrs., Mobile.

TELEPHONES.—Nashville, Tenn.—The Cumberland Telephone & Telegraph Co. has increased its capital 20% to $7,500,000, and will complete several lines that have been started.

PARK.—West Tuxedo, N. Y.—E. H. Harriman, of New York, has bought several hundred acres of land adjoining Tuxedo Park and will improve it for the purpose of a private park.

LIGHTHOUSE TENDER.—Baltimore, Md.—Bids are asked until July 3 for constructing a steel lighthouse tender. Rear-Admiral N. H. Farquhar, Lighthouse Board, Washington, D. C.

DREDGING.—Portsmouth, N. H.—Bids are asked until June 22 for dredging about 1,620 cu. yds. of mud and 5,090 cu. yds. of rock at the navy yard. Mordecai T. Endicott, Navy Dept., Washington, D. C.

TUNNEL.—New York, N. Y.—The contract for constructing the Brooklyn tunnel will probably be let Oct. 1. The cost of construction will be about $8,000,000. Pres. Alexander E. Orr, Rapid Transit Commission.

SHIPBUILDING PLANT.—Philadelphia, Pa.—It is reported that a $3,000,000 company is being organized to build a shipbuilding plant on the Delaware River at Chester. Senator W. C. Sproul, of Delaware county, is said to be interested.

COALING PLANT.—Boston, Mass.—The bids received for the coaling plant at the navy yard ranged from $109,000 to $165,000, and were from the following parties: Augustus Smith, 39 Cortlandt St., New York; Hoffman Engineering & Contracting Co., Harrison Bldg., Philadelphia; Edwin Burhorn, 62 Wall St., New York; Jno. H. Procter & Co., 205 Equitable Bldg., Boston; Haskins & Coffin, 32 Broadway, New York; Snare & Triest, 39 Cortlandt St., New York.

## U. S. POSSESSIONS AND CUBA.

AUTOMOBILES.—Hawaii.—It is stated that L. T. Grant, Mgr. Honolulu Automobile Co., is visiting the United States to purchase automobiles and sundries. The company is building a storage battery house, etc., in Honolulu.

SEA WALL.—Havana, Cuba.—Reports state that the U. S. engineers have begun the construction of the proposed sea wall along the harbor front, to cost about $350,000. It is also proposed to dredge the extreme inner part of the harbor.

MASONIC HALL.—Hilo, H. I.—Press reports state that the Masonic Hall Association of Hilo proposes to build a Masonic Hall. P. Peck, Pres.——The U. S. government proposes to build a new quarantine station at Hilo, to cost about $50,000. Dr. L. E. Cofer, U. S. N., Honolulu, may be addressed.

LIGHTHOUSES.—Cuba.—Bids are asked until July 1 for furnishing the materials and for constructing two lighthouses, etc., at Jutias Cay and Punta Gobernadora, as stated in our advertising columns. Waddell & Hedrick, Consult. Engrs., 664 Gibraltar Bldg., Kansas City, Mo.; E. J. Baldin, Ch. Engr., Lighthouse Bd., Havana, Cuba.

SEWERAGE AND PAVING.—Havana, Cuba.—We are informed that the bid of Onderdonk, McClellan & Cady, of New York and Brooklyn, for constructing the proposed sewerage system and paving was too high, and new bids will probably be asked for immediately. Some changes will be made in the specifications, and the plans revised to date to show changes in grade and alinement. The itemized bid of Onderdonk & Co. is given under Contract Prices. Lieut. W. J. Barden, U. S. Engr., Ch. Engr. of the City of Havana.

## FOREIGN CONTRACTS AND EXPORT NEWS

ELECTRIC RAILWAY.—London, Eng.—The Metropolitan District Underground Ry. Co. has accepted the plans of the Chas. T. Yerkes syndicate for equipping the road with electricity. Work will be begun at once and will occupy two years. A generating station will be built at Chelsea, the various stations rebuilt, and new rolling stock will be purchased. The Maryland Trust Co., of Baltimore, will be the American financial agent of the enterprise. J. G. White & Co., 29 Broadway, New York, and London, acted as consulting engineers for the Maryland company. The Metropolitan has liberal franchises, which permit expansion to meet any requirements in the growth of its business. One provision it possesses is the right to build another tunnel below its present one. The future may call for such an addition, owing to the growing density of the population and the big movement of passengers this condition creates. It is proposed to spend $1,500,000 on new rolling stock and $2,000,000 on a power station. Other expenditurse will increase the outlay to over $5,000,000. J. S. Forbes, Pres. District Ry. Co., London.

SAW MILL MACHINERY, ETC.—Mexico City, Mex.—Reports state that G. H. Hewitt, of Lonergan & Co., of Mexico City, is in New York (address care of the Abbott-Gamble Contracting Co., Times Bldg., N. Y.), for the purpose of buying about $50,000 worth of mill machinery.

SCHOOL BUILDINGS.—London, Eng.—Contracts for building new school houses have been let by the county council as follows: West Hill, Wandsworth, to W. Smith & Son, at $145,000; Wickham Lane, Greenwich, to Kirk & Randall, $102,000; Marylebone Division, Camden Road, Finsbury, to W. Gregor & Son, $104,000; Bostall Lane, Plumstead, to W. Downs, $135,000; Woods Road, Peckham, to Stimpson & Co., $62,000.

POWER HOUSE.—Brighton, Eng.—E. C. & J. Keay, Ltd., Birmingham, Eng., have submitted the lowest bid at $75,000 for the ironwork for the power house at Brighton. The American Bridge Co., of New York, submitted a bid at about $115,000.

BUILDINGS, BRIDGES, ETC.—Cochin-China.—Bids are asked by the Office du Commerce Exterieur, rue Feydeau, Paris, France, until July 23, for earthwork, buildings, etc., for the proposed Tourane, Hue & Quang-Tai Ry. to cost about 3,300,000 piastres, and until Aug. 17 for iron bridges, etc., at Hanoi, Cochin-China.

## INDUSTRIAL NOTES.

THE NEW ENGLAND STRUCTURAL CO., Boston, will furnish the steel roof for the new water gas building for the Newton & Watertown Gas Co., at Watertown, Mass.

THE FILER & STOWELL CO., Milwaukee, has an order, through its Chicago office, for a 3,000-HP. engine and gears for the rolling mill of the Inland Steel Co., at East Chicago.

THE CAROLINA PORTLAND CEMENT CO., Charleston, S. C., will soon increase its capital stock for the purpose of erecting a plant to manufacture both Portland and natural cement.

THE AMERICAN WOOD PRESERVING CO., 806 Chestnut St., Philadelphia, has just shipped to Japan, through Takata & Co., of New York, a large order for their wood preservative, "Woodiline."

WM. B. SCAIFE & SONS, Pittsburg, have a contract from the Harrow Spring Co., Kalamazoo, Mich., for a number of steel frame structures, the main building to be 290 x 90 ft. and 32½ ft. high.

THE STANDARD WATER METER CO., 22 Reade St., New York, has just received orders from Japan and Russia in addition to doing a good business in this country, for its "Standard" water meters.

THE CHAIN BELT CO., 15 Cortlandt St., New York, is equipping Tilyou's Steeplechase at Rockaway Beach, L. I., and also the Revere Beach Co.'s Steeplechase at Boston, using links designed especially for this work.

THE EVENS & HOWARD FIRE BRICK CO., St. Louis, is introducing a glazed clay conduit pipe, made in halves, for covering iron pipe in manufacturing and power plants to prevent loss of heat, corrosion and electrolysis.

FISHER & SAXTON, Washington, D. C., have delivered four "Dromedary" mixers to J. G. White & Co., for shipment to New Zealand, where they are to be used on concrete in the construction of the Auckland electric tramways.

THE ELECTRIC FIREPROOFING CO., 19th St. and East River, New York, is now fireproofing all the woodwork, including oak, yellow pine, maple, birch, spruce, etc., to be used in the construction of the new 16-story addition to the Martinique apartment house, now being built on Broadway, between 32d and 33d Sts.

THE EXETER MACHINE WORKS, Pittston, Pa., is at present installing a complete coal handling system employing the Exeter-Le Grand conveyor for the Oxford Paper Co., Rumford Falls, Me., and also one for the New York Gas, Electric Light, Heat & Power Co., 39th St. Station, New York city. It has recently shipped six of its improved 75-HP. hoisting engines to Havana.

THE AMERICAN BLOWER CO., Detroit, recently closed a contract for the entire heating, ventilating, drying and mechanical draft plants for the new works of the New York Glucose Co., now being erected at Shady Side, N. J., opposite West 96th St., New York city. There are 14 distinct heating plants and five starch drying plants. The heating apparatus contains a total of about 100,000 ft. of surface, fifteen steel plate fans, varying in size from 80 ins. to 140 ins., and five large disk fans. There is also a 360-in. steel plate fan for the forced draft plant. At present 14 boilers are being installed, but eventually there will be 18, aggregating 9,500 HP. output in steaming capacity. This fan is to provide the blast necessary for the proper combustion of the fuel, which will amount to nearly 50,000 lbs. of anthracite buckwheat coal per hour.

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